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NATIONAL RESOURCES DEVELOPMENT

REPORT FOR 1943

PART I. POST-WAR PLAN AND PROGRAM

JANUARY 1943

NATIONAL RESOURCES PLANNING BOARD

UNITED STATES GOVERNMENT PRINTING OFFICE - - - - - - - - - WASHINGTON, D. C.

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MESSAGE FROM THE PRESIDENT

To the Congress of the United States:

To assist the Congress in the development and consideration of appropriate legislation to achieve normal employment, to give assurance for all our people against common economic hazards, and to provide for the development of our National resources, I am transmitting herewith two reports of the National Resources Planning Board.

The first, "National Resources Development—Report for 1943" presents the results to date of the Board's work on post-war plans and a record of wartime planning activities. The Board proposes measures to meet the problems of the transition period from war to peace and for the longer range development of an expanding economy. It is appropriate that each year the immediate programs contained in the Budget of the United States should be considered by the Congress in the light of much longer range plans and programs. To facilitate such use of this report, I recommend that the report be printed, in accordance with past custom.

We can all agree on our objectives and in our common determination that work, fair pay and social security after the war is won must be firmly established for the people of the United States of America.

Men in the armed forces and all those engaged in the war effort rightly expect us to be considering their future welfare.

We fight today for security for our Nation and at the same time we can endeavor to give our citizens and their families security against attacks from without, and against fear of economic distress in old age, in poverty, sickness, involuntary unemployment and accidental injuries. We need to look forward to the accomplishment of these objectives—world peace, democratic society and a dynamic economy.

The second report transmitted herewith, on "Security, Work, and Relief Policies", has been developed over the last 3 years by the National Resources Planning Board, at my request, with the cooperation of the Federal agencies concerned and with the help of citizens with special knowledge and competence in this field. It reviews the accomplishments and experience of the last 10 years, pointing out some of the weaknesses of our security system, and suggesting ways of improving and strengthening the whole program.

Because of their basic importance to our national welfare during the war and after the war, it is my earnest hope that the Congress will give these matters full consideration during this session. We must not return to the inequities, insecurity, and fears of the past, but ought to move forward towards the promise of the future. When the Congress has agreed on procedures for the consideration of these problems, the Executive agencies responsible for the administration of programs in these fields are prepared to provide the Congress with all assistance within their power in devising appropriate ways and means to accomplish these high purposes.

FRANKLIN D. ROOSEVELT.

THE WHITE HOUSE, *March 10, 1943.*

LETTER OF TRANSMITTAL

Executive Office of the President
National Resources Planning Board
Washington, D. C.

December 16, 1942.

The President,
The White House.

My Dear Mr. President:

We have the honor to transmit herewith National Resources Development—Report for 1943. In accordance with your instruction, we have concentrated our activities during the last two years on "correlating plans and programs under consideration in many Federal, State, and private organizations for post-war full employment, security, and building America."

In Part I of this document, Post-War Plan and Program, we have brought together some of those plans both for the transition period immediately following the cessation of hostilities and for the longer range period of post-war development of our expanding economy.

Part II—Wartime Planning for War and Post-War—presents the current planning activities for stabilization and development.

The decisions taken during the war will make possible or impossible the execution of the plans which we as a people make for the peace. We need to see more and more clearly the kind of world toward which we are headed in order to maintain the fighting spirit of our armed forces and the ardor of our industrial workers. We need to stir the imagination and aspirations of all people, free or temporarily enslaved, for new objectives, new goals which can be reached when the war is won. Some people work harder and fight harder when they are on the defensive or fighting for their very lives. Fortunately, we Americans fight best and produce more under the challenge of adventure and with the "offensive spirit."

To win the peace we must call on those deeper resources of the spirit which provide patience and endurance through crisis and which light the future with vision and with hope.

Respectfully submitted.

Frederic A. Delano, *Chairman*
Charles E. Merriam
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NATIONAL RESOURCES DEVELOPMENT REPORT FOR 1943

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NATIONAL RESOURCES PLANNING BOARD

INTRODUCTION, FINDINGS AND RECOMMENDATIONS

INTRODUCTION

Findings and Recommendations

I. Plans for Transition from War to Peace
   - A. Demobilization of Men from the Armed Forces and from War Industries
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II. Plans for Development of an Expanding Economy
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IV. Plans for Action by State and Local Governments and Regions

INTRODUCTION

Our peace aims are war weapons which in the end may determine the outcome of the military struggle in which we are now engaged.* Extensive post-war plans are being made now in every country of the world, both by the United Nations and the Axis. The governments of the world are expending for this purpose large amounts of time and money in the midst of fighting. Post-war planning agencies have been set up in Britain and the Dominions, in China, in Russia, by occupied countries such as Poland, Holland, and Belgium, as well as in the enemy countries—Germany, Italy, and Japan.

The National Resources Planning Board, in presenting to the President a series of recommendations for post-war planning, at the outset states the general policy underlying its plans and programs.

We look to and plan for:

I. The fullest possible development of the human personality, in relation to the common good, in a framework of freedoms and rights, of justice, liberty, equality, and the consent of the governed.

As a means of protecting justice, freedom, and democracy:

II. The fullest possible development of the productive potential of all of our resources, material and human, with full employment, continuity of income, equal access to minimum security and living standards, and a balance between economic stability and social adventure.

As a means of insuring the peaceful pursuit of life, liberty, and happiness:

III. An effective jural order of the world outlawing violence and imperialism, old or new fashioned, in international relations; and permitting and energizing the fullest development of resources and rights everywhere.

The three factors—democracy, dynamic economy, and peace—never in the history of mankind have been united in a political system. The development of a society combining these three factors means a dynamic economy with fair distribution of the resulting gains throughout the community, the organization of this economy upon the basis of democratic controls and cooperation, the organization of a jural order of the world within which societies can live in peace and freedom. This is a novel combination never before attempted as a whole, although tried in part, nor ever before possible in man's history until the present time.

Experience clearly shows that it is impossible to maintain high standards of living without a dynamic economy; that it is impossible to live in peace without some effective force of world concert and order; that only under the fraternal influence of a democratic society can there be any security either for peace or prosperity, liberty and justice, or the continuing advancement of the spiritual ideals we cherish above material gains.

This is the inexorable trend of our time, dictated by the growth of human intelligence, and by the awakening nobility of the human spirit with its insistent demand for fraternal recognition and appreciation by fellow men. This upsurging human personality, even in the terrible grip of war, looks for the new heavens and the new earth within its sight and grasp for the first time. If men of good will cannot unite to find a direction and show the way, men of bad will appear; they will loot the ships of state wrecked by the false lights on the shore.

It is for these aims that the United States is striking its hammer blows in this titanic struggle. This is not a war for revenge and conquest; for more lands, and more people; but for a peaceful and fraternal world in which the vast machinery of technology, of organization, of production may be made to serve as the effective instruments of human ideals of liberty and justice.

*Wartime activities of the Board are covered in Part II: "Wartime Planning for War and Post War," House Document 128, Part 2.

The National Resources Planning Board believes that it should be the declared policy of the United States Government to promote and maintain a high level of national production and consumption by all appropriate measures necessary for this purpose. The Board further believes that it should be the declared policy of the United States Government:

To underwrite full employment for the employables;

To guarantee a job for every man released from the armed forces and the war industries at the close of the war, with fair pay and working conditions;

To guarantee and, when necessary, underwrite:

Equal access to security,

Equal access to education for all,

Equal access to health and nutrition for all, and

Wholesome housing conditions for all.

This policy grows directly out of the Board's statement concerning which the President has said, "All of the free peoples must plan, work, and fight together for the maintenance and development of 'Our Freedoms and Rights'."

THE FOUR FREEDOMS

Freedom of Speech and Expression, Freedom to Worship, Freedom from Want, and Freedom from Fear; and

A NEW BILL OF RIGHTS

1. The right to work, usefully and creatively through the productive years;
2. The right to fair play, adequate to command the necessities and amenities of life in exchange for work, ideas, thrift, and other socially valuable service;
3. The right to adequate food, clothing, shelter, and medical care;
4. The right to security, with freedom from fear of old age, want, dependency, sickness, unemployment, and accident;
5. The right to live in a system of free enterprise, free from compulsory labor, irresponsible private power, arbitrary public authority, and unregulated monopolies;
6. The right to come and go, to speak or to be silent, free from the spyings of secret political police;
7. The right to equality before the law, with equal access to justice in fact;
8. The right to education, for work, for citizenship, and for personal growth and happiness; and
9. The right to rest, recreation, and adventure, the opportunity to enjoy life and take part in an advancing civilization.

Plans for this purpose are supported and explained in this report. The previous publications of the Board, including "National Resources Development—Report for 1942," transmitted to the Congress by the President on January 14, 1942, and a series of pamphlets ("After Defense—What?", "After the War—Full Employment," "Post-War Planning," etc.) also provide background for this proposal.

A Dynamic Expanding Economy

How can these aims be realized in practice? We know that the road to the new democracy runs along the highway of a dynamic economy, to the full use of our national resources, to full employment, and increasingly higher standards of living. This goal is within our reach if we plan to meet the challenge of our times.

Failure to adjust to new conditions cost us $200 billion in the decades of the twenties and thirties. But such losses cannot be measured accurately in money terms; for they include undernourished children, failure to provide needed medical care, failure to provide for elderly people, and the desperation which comes from long failure to have creative work to do. Such failure to use our resources results from our lack of adjustment to our changing economy. All necessary physical things exist to supply all reasonable wants of all the people of the civilized world, and especially of the United States.

Enough for all is now possible for the first time in history. But the mere existence of plenty of labor, raw materials, capital, and organizing skill is no guarantee that all reasonable wants will be supplied—or that wealth will actually be produced. For there are no automatic devices in our system that will insure fair distribution of income between various kinds of goods and services or guarantee full use of resources. Regardless of the existence of plant, labor, capital, and raw material, actual production of goods and services and the size of the national income will depend on effective consumer demand and effective organization. Fear of inadequate market for goods and services has compelled various restrictive policies to be adopted by producing groups in industry, agriculture, labor—as defense mechanisms. This fear must be removed.

Peacetime activities can be found big enough to keep people employed to the extent necessary, both to create the market—through effective demand—and create the goods and services to maintain national income at a one hundred billion level or higher. With the will to act, it is possible to reach this peacetime goal with no great departure from the pattern of life and enterprise that we have enjoyed. Government can and should underwrite effective demand for goods and services. The methods to accomplish this purpose are several. No one alone is adequate. No list is final, for times and conditions change.

One of the most important economic facts we have learned in the past decade is that fiscal and monetary policy can be and should be used to foster an expanding economy. We need not be afraid of our monetary system and our production machinery. We have begun to master the tools of resource management in a changing world. We have long been aware of the possibilities within this area, but we have been dominated by fear of the controls of the system. The relationship between the private institutions of investment and banking and our monetary system are beginning to be understood. They have found their place in our orderly scheme of management so that it is possible to appraise their part in the moving scene. We have begun to understand the place private business plays in creating inflationary as well as deflationary currents in the national economic life. We have begun to see the place which public finance, municipal, state, and national, plays in maintaining economic activity.

Accordingly we plan for a dynamic expanding economy on the order of 100 to 125 billions national income. It has taken total war to reveal to us the capacity of our production machine, once it is fully energized. We know now that the American national income which was 40 billion in 1932 leaped to 76 billion in 1940. It has now reached the figure of over 100 billion (1940 dollars). Little vision is required to see that our production machine can be made to produce plenty for peace as well as plenty for war. We know that our national income is capable of far larger expansion. In addition to the progress of technology in the generation preceding the war there have been amazing advances in the last few years—inventions in the discovery of new applications of materials, and in organization both of men and materials. We have not yet even approached the limit of our inventive ability and organizational capacity. On the contrary, we have just begun to utilize our vast resources.

The government need not and should not alone undertake the attainment of such high national production, but can underwrite it and cooperate in its attainment. It must see to it that the people are not let down by failure to stabilize employment and investment. With adequate post-war policy and planning, involving the cooperation of private industry—business, labor, agriculture—with government, new levels can be reached far beyond anything yet attained.

We stand on the threshold of an economy of abundance. This generation has it within its power not only to produce in plenty but to distribute that plenty. Only a bold implementation of the will-to-do is required to open the door to that economy. Give the American people a vision of the freedoms that we might enjoy under a real program of American and world-wide development of resources, and all the opposition of blind men and selfish interests could not prevent its adoption. The people of America will respond if these possibilities are placed before them and if they

are shown the way toward practical implementation of the will-to-do. Those who stand for revolutionary change in our economy are numbered in such few thousands as to be insignificant, but those who stand for profound evolutionary changes in the direction of making our economy function and produce the plenty of which we have seen it to be capable are numbered in the millions. If the leaders of this generation can summon their social inventiveness to the point of developing measures required for a program of plenty, they will have behind them a solid phalanx of supporters so overwhelming in their numbers and so enthusiastic in spirit that even the faint-hearted and those who profit from instability will be swept along. In peace no less than in war, leadership must come from the stout-hearted, the buoyant of spirit, and the fertile of mind.

There are many questions of ways and means to be considered involving hard and realistic dealing with details as well as with broad objectives. What are the post-war implications in the field of price levels, of possible inflation or deflation? What are the post-war implications of priorities and allocations; of rationing; of price fixing? What are the implications of the post-war period for changes in taxation, corporate, excess profits, and otherwise? What are the relations between tax reduction and restoration of purchasing power? What are the implications arising from changes in or removal of credit restrictions? What are the implications of debt repayment policy? What are the implications of the post-war period for wage levels, hours, and standards? What are the broad changes in economic status respecting the reorganization of industries and areas? These are only a few of the many kinds of policies that must be determined and administered in the period of reconstruction and reorganization which affects all areas and all occupations.

But the keys to post-war planning in this area are the dynamic economy, with expanding production, fair diffusion of the resulting gains, full employment, adequate purchasing power, a balance of security, and adventure.

Democracy and Dynamic Economy

The organization and operation of a dynamic economy on a high level of production and consumption can be accomplished only in a democracy. In the plans of democratic society no one can be omitted from full consideration. Free labor is not only happier labor, but it is also more efficient labor. Free men produce more than slaves. Under modern conditions with our complex technology and widespread mechanization, close cooperation is the best basis of organization. The highest production whether on the farm or in the factory is not obtained by supervisors with whips in their hands but by the skillful union of management and labor. The best discipline, the highest morale, the greatest productivity are alike the products of good will, mutual confidence, and genuine cooperation among men. The loftier values of life are not fostered by brutality and violence, but by reason and justice.

Whether viewed from the material or the ideal point of view, democratic societies are best adapted to the operation and unfolding of the type of civilization in which we live and work. Slavery, piracy, autocracy, tyranny are outworn institutions—ancient evils—looking backward rather than ahead. Modern autocracies are burning up the accumulated goods of the society which produced the free and inventive mind, now the basis of modern science, technology, production, education, medicine, engineering. These social gains did not spring up from the seeds of inequality, of slavery, of brutality, and violence, but are deep-rooted in the ideals of freedom, opportunity, reason, justice, equality. Even the tank, the airplane, the submarine, the armored ship, propaganda: these are our own weapons—invented by free peoples.

There is at the heart of tyranny and autocracy in our day, when men have more leisure and more learning, an internal conflict which cannot be resolved and which leads inevitably to weakness and disintegration. The masters of modern despotisms must have men to think new thoughts and devise new instruments of destruction; but they must be slaves who do not think too much. These slaves must be told what to think by masters who do not even know what to think about thinking. There must be a plentiful supply of cultured slaves who must do the bidding of bloody masters. Trying to use reason as a tool for injustice, violence, inequity, slavery, leads in the end to revolution.

Democracies did not prepare or plan for war on any large scale, not because they could not, but because they preferred peace and justice. They chose to use their energies for other purposes than the organization of large-scale warfare. The lack of military preparation was not democratic incapacity, but unwillingness to abandon the hope of organizing a world free from aggression and violence. Meantime democracies are abundantly demonstrating their ability to prepare for the enterprises of war. Not slowness but speed has characterized the amazing reorganization of the peace economies of democracy into instruments of flaming war.

There are still some who fear democracy cannot plan for peacetime post-war activities. This too is partly enemy propaganda and partly the faint-heartedness of those who doubt the capacity of democracy to deal with

the general welfare. This too is based upon a complete misunderstanding of the capacity of democratic institutions for constructive action.

In early days our Republic showed clearly the purpose of the Founders to plan on broad lines for development of the national resources of that day. American history demonstrates democratic achievement in planning successfully the remarkable development of a public-land policy under the direction of Jefferson, the development of a fiscal policy and a commercial industrial policy under the leadership of Hamilton, the development of a transportation policy under Gallatin and others. In the first generation of our history there was set up a series of very comprehensive plans for the development of our public lands on the one hand and of manufacturing and trade on the other. Plans for industrial development in America and for the development of our public domain were the combined work of the two great figures of the time, Hamilton and Jefferson. Washington and the Adamses were deeply concerned with these plans, as were Madison and Monroe. Their planning of American national resources was the most daring and original design yet developed by man, growing out of the democratic purposes and leadership of the day. Education, science, invention were closely interwoven into this whole plan of American development.

Some of these broad types of national developmental planning were lost sight of in the long struggle of the Civil War. After that war, the lead in planning was taken by new combinations of great industrial corporate power. But for the last 50 years we have been engaged in conservation, organization, laying down strategic lines of industrial and agricultural development in city, state, and nation. The double task of our democracy has been that of expanding our national productivity at an amazing pace while maintaining ideals of social justice and of liberty in the midst of tremendous growth and progress. It would be wrong to ignore our many mistakes and many failures along the way. But a still greater error not to see success shining through our failures.

Now our democracy is more capable than ever of making broad plans of national policy and of local, State, and regional policy as well. We do not stand at the broken end of a worn-out way, but look forward to broad vistas of progress, to higher levels of achievement, to higher standards of material prosperity, and to richer possessions in the world of human values which cannot be measured by money standards.

It is time to outline more sharply a program through which democratic ideals may be more perfectly realized in the affairs of the community in the post-war period. The broad bases of such a program have already been stated in the Four Freedoms and in the Atlantic Charter. We have previously endeavored to spell out the program in greater detail in the New Bill of Rights and in the five specific objectives presented in our report for 1942.

External—Internal

It is essential to consider some of the important relationships of internal planning to external planning.

The organization of a jural order of the world from which aggression is effectively eliminated will require many adjustments in the arrangements of the United Nations and all its units, and will of course profoundly affect the political and economic life of the United States. Policies and measures to curb aggression and to develop the resources of various countries will call for many types of concerted action and organization. We shall be confronted with military and economic decisions which will have to be made immediately at the end of hostilities to facilitate the transition to peace. To make victory secure, the United States as a part of the United Nations must aid in the disarmament of the Axis Powers, the demobilization of armies, the repatriation of war prisoners and dislocated populations, the feeding of the starving peoples, and the rehabilitation of devastated areas. The United States must gear its agriculture and industry to the tasks involved, and perhaps apply some form of lease-lend, use its shipping facilities, and supply technicians and organizers on a scale unknown heretofore.

Domestic planning after the war will depend in even larger measure than before on decisions with regard to external policies. Land-use planning cannot be adequately carried out without considering the place of American agriculture after the war in foreign markets. National planning for the maintenance and development of our waterways and harbors will depend on decisions with regard to international trade, shipping, and national defense. The planning of air fields and air transport will hinge in no small measure on the development of international aviation.

The most vital planning problem in the economic field at the end of the war will be the maintenance of full employment and avoidance of a prolonged depression following a short-lived post-war boom. The economic and social stability of the United States, as of other countries, depends in great measure on our capacity to prevent mass unemployment. But there is no question that full employment in the United States would help other countries after the war in maintaining economic and social stability. Full employment and high national income in the United States mean large imports from many lands and high levels of employ-

ment in many lands. Internal American prosperity spreads purchasing power throughout the world and tends to promote a high volume of world trade in goods and services. On the other hand, should we experience a slump, it would spell depression for other countries accustomed to sell their commodities and services in our markets. From the point of view of their own interests, most countries of the world desire to see the United States prosperous, active, and moving forward in its economic development.

Neither the United States nor the United Nations can achieve full employment after the war without extensive interchange of the products of world resources. This means that we must consider on what terms world resources will be exchanged. This cannot be done in a day, or by some simple panacea. Nor can there be arbitrary dictation. There must be compromise, concession, give and take. Some sacrifice by everyone will be necessary. There will be involved the problems of trade agreements, foreign trade, financing, currency, exchange, credits, tariffs, which must be examined in the light of the conditions created by the war. New devices may be applied to increase the volume and guide the direction of international trade.

Since the United States can attain these aims only in cooperation with other nations, it must relate its internal policies to measures facilitating the economic development of other countries. This integration raises many problems which call for decisions on specific as well as general issues. One of the main questions is that of the extent to which the United Nations should interweave economies into a system of world economy based on geographic division of labor. In relation to post-war employment planning, the question is, what is the maximum volume and optimum composition of international trade for the United States and other nations at given levels of employment and with a view to as favorable and reasonable terms of trade as possible.

As we participate in the economic development of Europe and the Far East, how can we adjust American trading relations to mutual advantage? The economic development of China is one of the essential factors in our post-war policy in the Far East. But the economic development of China will depend largely upon the amount of foreign capital and services which she can obtain for the building of roads and railways, the erection of power plants, the construction of new industries, and the development of resources. As in the case of Latin America, the extension of American capital to China might mean the export of machinery and capital equipment for many years to come. Whatever domestic policies we adopt for insuring full employment might, therefore, be adjusted to the fact that there will be a large-scale development and growth of our capital goods industries for a number of years in order to aid in the development of Europe, China, Latin America, or other areas.

Another question of external-internal relations which will arise again is that of migration and population resettlements after the war. The United States can maintain its present restrictive migration policy, with a clear conscience only to the extent to which we help to maintain employment and production elsewhere so as to make the need for emigration less urgent. Large numbers of peoples in parts of Europe will seek avenues of escape from depressed living margins. The United Nations must cooperate in answering this world problem.

The future form or forms of organization for cooperation among the United Nations offer many alternative possibilities—economic, cultural, jural—with which many agencies of the Government are now dealing. Patience, inventiveness, courage will be needed in order to solve the many complications and perplexities of the interrelations of diverse peoples. Never were greater demands upon sound statesmanship than these new situations even now being presented to the United States. It is necessary to look hard at economic, ethnic, cultural, political realities while keeping in mind the ideals for which we work. We strive for a free world of free peoples. But in taking thought for the morrow, we must use our heads as well as our hearts. Otherwise the children of our soldiers will be fighting another war; 200 billions of national income that should go to general well-being will go again to feed the appetite of Mars.

We are engaged today in a desperate war of survival because the world failed to accept the challenge of a world economy of plenty. This must not happen again. The earth on which we live is indeed the good earth with resources adequate to supply fully the needs of its 2 billion inhabitants, if only this generation can organize the will-to-do. The test is organizational ability and attitudes, not of basic resources. If we can organize and implement our resources and our ideals, we shall witness an unlocking of the latent force of production, a resurgence of the human spirit, a buoyancy that comes from participation in a mighty and constructive undertaking. It is bold and courageous goals not little aims that lift up the human heart. At last in the history of man's upward climb, freedom from want and fear is within his reach.

Characteristics of the Program

The following program is based on a long series of Board reports dealing with the various subjects discussed, upon our extended experience in various phases

of the present war effort and activities, on inquiry by competent technicians (whose reports are attached hereto), and on careful analysis of a large body of data and experience.

We do not present this as a complete and finished program but as material for consideration by the public in general and by those charged with direct responsibility for determining our national policies. We do not know the time and condition of the peace, but we can examine the elements of which the post-war problem will be made up, and prepare the way for alternative plans as our situation changes. In this respect, our responsibility is like that of a general staff working out alternative plans for action. The uncertainty of the future is not a valid excuse for inaction, but on the contrary it is a direct reason why we should explore the future as far as we can and make ready for a variety of different situations.

We recognize that in order to make effective this program of war aims and post-war adjustments to complete in peace the victory won in the field, certain governmental tasks be faced frankly by the American people.

Legislation will be required to give legal authority for the exercise of powers adequate to guide the progress from war status to peace status, assuring a balance between governmental controls and unregulated enterprise.

Administrative organization must be provided for the execution of this legislative authority and to assure the people of an orderly devolution of forms of economic, fiscal, and social controls required by war but which should be modified or relaxed. These forms will involve institutions which will be governmental, private, and mixed. They will be the instrumentalities through which the people will achieve the fruits of a democratic victory.

Planning for such administrative organization must not be left until the war is over. Indeed, the end of the war may not be sudden as it was in 1918. Planning for the required governmental machinery necessitates provision for sudden cessation of hostilities, of course, but also for ending war in different parts of the world at different times. Continuous attention may be given to this problem even while we are at war, for there will not be time after the end of fighting to create new machinery.

In every agency of government thought is being given to the problems of post-war planning. The results of this thinking may be brought together as a basis for the over-all post-war plan for governmental machinery in various ways. Some existing agencies of administration, regular and emergency, probably will be instruments for the execution of post-war programs. They should, without neglecting their supreme job of winning the war, plan now for their own conversion to meet the needs of cessation of war, the transition period, and then, for democracy, dynamic economy, and peace.

FINDINGS AND RECOMMENDATIONS
NATIONAL RESOURCES PLANNING BOARD

I. PLANS FOR TRANSITION FROM WAR TO PEACE

Plans, legislation, and administration must be agreed upon during the war for the transition period immediately following the cessation of hostilities. Such plans must, of course, be adjusted to considerations of military strategy. They must be made to fit a variety of situations. For instance, we may have victory in one field of battle and necessity for continued fighting in another. There may be a considerable period during which we may be still fighting in Europe or in Asia while we are attempting at the same time to organize the peace in the other continent and adjusting our own economy. We shall probably have to demobilize our fighting forces—men and equipment—over a period of months; just as it took months to mobilize men and machines for active war service.

War weariness and "back to normalcy" cries will face our leaders at the end of the fighting. A large part of the problem of "winning the peace" after other wars has been the natural relaxation of tension which followed military victory—forgetting that the triumph of arms only opens the door to the problems and opportunities of creating and organizing the peace.

Extremes of hope and fear will inevitably be present—the fear of a depression with large numbers of unemployed men from the armed forces or from war factories; the hope of a "boom" to fill the pent-up demands for consumption goods which have been restricted during the war. Too much confidence and "boom" may in turn lead to too speedy relaxation and end in an even greater depression with inadequate or weakened tools in the hands of the Government to combat it. Post-war adjustment plans must head off both boom and depression and substitute orderly gradual progress.

Our plans must, therefore, leave considerable discretion in administrative agencies. The recommendations which follow cover the demobilization of men, machines, and controls in that order.

A. Demobilization of Men From Armed Forces and From War Industries

Legislation for Post-War Adjustment of Manpower From the Armed Forces and War Industries

The demobilization of the armed forces of the Nation must be as carefully planned as their recruitment. The Selective Service Act of 1940 directed that arrangements be made for the return to previous employment of all men called for service with the armed forces of the Government. A Reemployment Division in the Selective Service System directs the work of reemployment committees in various localities which cooperate in replacing all persons in the armed forces released from service. This Division is planning for the future demobilization of armed forces and also is studying potential employment demands in the post-war period.

An informal conference on post-war adjustment of civilian and military personnel has been meeting for the last 6 months under the auspices of the National Resources Planning Board. It is composed of:

Dr. Floyd W. Reeves, National Resources Planning Board, Chairman.
Lt. Comdr. Ralph A. Sentman, U. S. N. (Ret.), Bureau of Naval Personnel, Navy Department.
Col. Francis T. Spaulding, Special Service Division, War Department.
Gen. Lewis B. Hershey, Director, Selective Service System.
Brig. Gen. Frank T. Hines, Director, U. S. Veterans' Administration.
Dr. Edward C. Elliott, Chief, Professional & Technical Employment and Training, War Manpower Commission.
Dr. William Haber, Chairman, Planning Committee, War Manpower Commission.
Dr. A. F. Hinrichs, Acting Commissioner, Bureau of Labor Statistics, Department of Labor.
Dr. T. J. Woofter, Jr., Director of Research, Federal Security Agency.
Dr. Howard R. Tolley, Chief, Bureau of Agricultural Economics, Department of Agriculture.
Dr. Francis J. Brown, Secretary, Joint Army-Navy Committee on Welfare and Recreation, War Department.
Mr. Leonard Outhwaite, Secretary.

In a statement issued by the President at the time of his approval of the bill extending the Selective Service Act to young men of 18 and 19 years of age, the President said:

"I am causing a study to be made by a committee of educators, under the auspices of the War and Navy Departments, for the taking of steps to enable the young men whose education has been interrupted to

resume their schooling and afford equal opportunity for the training and education of other young men of ability after their service in the armed forces has come to an end."

The committee has been set up under the chairmanship of Brig. Gen. Frederick H. Osborn, Director, Special Service Division, War Department, with the following members: Y. B. Smith, Dean, Columbia Law School; Dr. D. M. Keezer, Office of Price Administration; Dr. R. C. Harris, President, Tulane University; Captain Cortlandt C. Baughman, Chief, Special Activities Branch, Navy Department; and John W. Studebaker, Commissioner of Education, Office of Education.

The President directed that in making these studies the committee should correlate its activities with the related studies of the National Resources Planning Board and further directed that the Board make its facilities available for the work of the committee.

Programs of vocational education and reeducation, both in vocational schools and in industry, must be adapted, and retained, for the purpose of preparing men to assume jobs in industry after they are released from the Army or Navy. We shall not be content this time to give each man $60 in cash and a ticket home. Every reasonable provision will have to be made to insure that these young men shall be enabled to take up their places in civilian life with only the inevitable loss of time which their service will entail. Also, protection of the insurance rights of service men, under our social insurance systems, not only for those who left covered occupations to enter service, but for those who enter covered occupations after the war, must be guaranteed. In all these problems we have the benefit of Canadian and English experience, where many such provisions are already written into law. In addition to such provisions for the appropriate groups of men, it is possible that the idea of a dismissal wage or allowance, proposed in relation to those employed in industry, is also applicable to demobilized men from the armed forces.

What of the other, even larger, problem of the demobilization of our civilian employes in our war industries? It is arguable that it would be less wasteful to continue some war production beyond absolute military necessity rather than to halt it all precipitately at the same time. Not alone would the immediate worker in war industries thrown out of work be affected by hasty industrial demobilization but transportation workers and the suppliers of raw materials for war production would also be affected. It is possible that some whole industries created to meet the Nation's need will appropriately be the Nation's charge as they retool and convert for peacetime pursuits.

A dismissal wage, possibly to be paid in installments, over a period of time, may seem a wise national safeguard. Nation-wide extension and liberalization of our unemployment compensation system might accomplish the purpose without the introduction of new machinery. Use of the projects for public works, which are described later in this report, to fill in any gaps in employment opportunity and to make wider and more efficient use of national resources, may be appropriate in the period of adjustment. Plans for demobilization must take precedence over longer range objectives because the ability to meet the immediate post-war situation wisely will determine whether we shall have the opportunity to pursue an orderly progress toward our long-range goal.

Studies now under way by this Board and by various Government agencies will provide much of the factual material needed for D-day plans.

B. Demobilization of War Plants, Machines, and War Contracts

Among the various policies for terminating and converting war plants to peacetime use, the following are recommended for consideration:

1. *Arrange for the orderly conversion to civilian use of unneeded war production facilities, through:*

(*a*) Procedures to dispose of Government-owned plants to private operators willing and able to proceed with conversion of plants to peacetime use and to early operation.

(*b*) Prevention of monopoly control of plants in the interest of a single group or industry. Large Government-financed war production plants, especially those producing basic metals and materials, should be distributed among numerous operators to encourage healthful business competition.

(*c*) Planning for a more desirable regional distribution of manufacturing from the standpoint of national defense and local diversification, by retaining in operation selected plants, financed in new industrial areas during the war by the Defense Plant Corporation or directly by Government allowance of rapid depreciation.

(*d*) Technical assistance to private operators of war plants to find the most appropriate peacetime use for their buildings, equipment, and labor skills in making products which could be economically distributed from the community in which the plant is located. Government should help plan the forms of industry conversion by supplying the probable patterns of consumer demands and the related pattern of demands for durable producer goods.

(*e*) Placing of Government orders for new major development projects, especially in the fields of urban reconstruction, river basin development, agricultural rehabilitation, and modernization of transportation,

by Government agencies, the Reconstruction Finance Corporation or the modified form of Federal Development Corporation suggested below. (The procedure would stimulate activity in such basic industries as steel and light metals, other construction materials, machinery and machine tools, as well as in the construction industry itself.)

(*f*) Provision for plant rehabilitation grants to be used for conversion of plant to peacetime production, and with grant contingent on actual conversion to production of peacetime goods within a specified period. (This procedure might be appropriate for industries with which Government agencies would not be likely to place orders under 1 (*e*) above, but where dislocation of whole communities and consequent losses of public and private investment might be avoided by quick conversion.)

(*g*) Granting of low-interest-rate Government loans to projects approved for conversion.

(*h*) Immediate provision in Federal tax laws for establishment of "Post-War Conversion Reserve," limited to use within a short period after termination of war contracts.

2. *Select the war plants to be maintained in operation or in stand-by condition.* Before the end of the war, the war facilities to be retained in operation or in stand-by condition must be selected in order that local communities and the operating industries can adjust their plans to meet the stand-by status of plants so selected.

3. *Continue certain war contracts*, in present or renegotiated form, needed for maintenance of military forces, for experimental production of improved military equipment, for requirements under existing lend-lease agreements, for stockpile war reserve, or for other governmental needs, so far as possible in areas where the replacement of war production by peacetime activity is likely to be slow and difficult and where sudden termination of contracts, therefore, would cause undue hardship and disruption of community life.

4. *Arrange for the liquidation of all other war contracts* as speedily as is consistent with economic and social welfare, and with reasonable regard to employment conditions and liabilities of contract holders, in order to:

(*a*) Prevent unnecessary use of labor and materials, since the supply of finished munitions on hand would then be ample for a peacetime army and since experimental production would be devoted to the making of improved military equipment.

(*b*) Stimulate rapid conversion of plant and machines to peacetime production. (*See also Promotion of Free Enterprise*, p. 27.)

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5. *Assist small producers and distributors and small enterprises* which are war casualties. This assistance should include technical advice, marketing aids, and favorable terms of financing.

6. *Develop new industries, new processes, and improved products*, by research work within the Government, increased assistance for research to private activity, aid in the dissemination of information on new materials, new processes, and new uses; and by maintaining free access to the use of both old and new materials and processes unhampered by misuse of the patent system. Provision should be made for access to those new inventions which are brought out by publicly supported or tax-exempt institutions.

7. *Extension and new forms of joint private and governmental partnership*, through use of mixed incorporations, granting or insurance of loans, or other joint ventures, etc. Government is already taking considerable part in the management of the many war industries which have been greatly expanded by the use of Government funds. Consideration should be given to the desirability of various types of partnership in the direction of those industries of crucial importance in both a wartime and a peacetime economy and in which the Government has made great investments. In this category are aluminum, magnesium, shipbuilding, and aircraft. Government has a direct responsibility and should participate in the decisions as to what areas and what concerns should continue to operate in these industries.

(*Additional material supporting these recommendations is presented on* p. 23.)

C. Demobilization of Wartime Economic Controls

We recommend for consideration:

The relaxation, modification, or retention of wartime controls is dependent fundamentally on the length of the war. The longer the war continues, the more rigorous the economic controls will become, since war demands will absorb more and more of our productive effort. Even with the attempts to maintain the essential plant in good working condition, large inroads will be made upon our capital goods.

Even with a fiscal policy favorable to a rapid transition to a peacetime economy and closely integrated to other methods of control, it would seem highly probable that for a time allocations of scarce raw materials will have to be retained, rationing of scarce consumer goods will have to continue, and some price controls, and wage controls, will have to be retained.

1. The policies for economic stabilization and production control developed during the war will of necessity be modified after hostilities cease. *Many of the*

policies affecting present controls will be reversed. Instead of endeavoring to restrict the consumption economy, the attempt will be to spread existing supplies as far as possible both at home and abroad. For at least a short period of time it will be necessary to draw on American productive capacity for most of the staples. The extent to which this can be done will, however, depend upon the extent to which inroads are made on American supplies and stock piles. As supplies become more adequate, the rigorous character of controls can be relaxed.

2. The regulations which limit the production of certain goods can be radically changed almost immediately. The expansion of enterprises concerned with the production of peacetime goods will be the first in order of importance. Thus the elimination of restrictions in this sphere can be expedited.

3. *Commodity (consumer goods) rationing will probably continue*, not only in order to secure more equitable distribution of scarce supplies, but also to prevent violent increases in prices. The inability to shift fiscal policy quickly suggests the possibility of runaway prices even after the war, such as the inflation that took place in 1920.

4. The demands for durable consumer goods may be very difficult to satisfy because of deferred demands and the time necessary to provide adequate plant capacity and to produce new supplies. Hence it may be necessary to *continue rationing durable consumer goods* probably for a longer period than other consumer goods.

5. Allocation of scarce raw materials should be retained until domestic and foreign producers have been able to supply sufficient quantities to make possible the reestablishment of a normal peacetime market. For many raw materials, the reduction in military demand will be more than sufficient to allow the satisfaction of all the immediate civilian needs. In some of these cases, it will be desirable to arrange for stock-piling of strategic materials.

6. Control of the distribution of industrial and construction equipment and other producers' goods will be needed so that priorities may be given to the rebuilding and re-equipping of factories and so that a proper sphere will be reserved for housing and other programs.

7. Corollary to the rationing and allocation will be *price regulation.* Retention of price controls should be expected for any commodity, as long as the potential demand is greatly in excess of available supply. For many industries it will take a considerable period of time to rehabilitate productive capacity and turn out enough goods to satisfy accumulated consumer demands. Without price control, violent inflation would result. Unless price controls are retained, a flood of buying in advance of ability to reconvert to peacetime production and distribution, would make it impossible to achieve an orderly transition to a civilian economy. The kinds of commodities for which prices must be fixed and the types of price controls to be retained will depend on the length of the war and the market position for each industry at the end of the war.

8. In the transition period the supply of labor will be such that in the absence of positive controls the labor standards built up over the years by collective bargaining and by legislation will be in danger of being seriously undermined. Vigorous enforcement of protective labor legislation will be necessary.

9. Utilize the wartime experience to develop such regulation as may stimulate the effective functioning of competitive business in normal times. Wartime experience has indicated the public importance of certain industries and the desirability of continued Federal control of their operation. Industries based on scarce raw materials, or those with rapidly diminishing reserves, and industries supplying power and fuels, fall into this category. Transportation and other public services may likewise be more closely controlled in the interest of national defense and the public welfare. The Government should retain control over patents and properties seized from enemy aliens and operate them directly or license their use in such a way as to encourage competitive development by private operators.

For the longer-range development of an expanding economy after the war, our free enterprise system and economic freedom for the individual will demand constant assistance from government and a renewed sense of vigilant responsibility on the part of all citizens.

It is appropriate that the National Resources Planning Board as an agency of the Federal Government, should give special consideration to the assistance and actions which government should undertake. Because of the Board's direct responsibility for the preparation of programs of public works which have regenerative or enduring value, a special place is given in this post-war plan to public works.

But, the main reliance for an effective consumer demand must come from private activities taking the lead in opening of new enterprises and in using our new productive capacity. The Board is under no illusion that the construction industry which now, with public and private activity combined, is at a peak of 11–14 billions can control a national income of 110 billions.

II. PLANS FOR DEVELOPMENT OF AN EXPANDING ECONOMY THROUGH COOPERATION OF GOVERNMENT AND PRIVATE ENTERPRISE

A. Plans for Private Enterprise

For the maintenance of and assistance to free enterprise and economic democracy we recommend for consideration

1. Measures to encourage the healthy and aggressive development of private enterprise, to stimulate initiative and resourcefulness of management and to open the channels of investment opportunity, large and small.

2. Measures to prevent the abuse of economic power, or monopolistic privilege, and to check the wasteful exploitation of the nation's resources.

3. Measures to eliminate avoidable uncertainties and needless burdens in the laws affecting enterprise and in their administration.

See also Promotion of Free Enterprise, p. 27.

B. Plans for Finance and Fiscal Policies

It is our national policy (as it has been since the beginning of our history) to accept as a suitable role of government, positive effort to foster and encourage the free activities of private individuals and agencies in advancing their well-being through productive enterprise.

Accordingly, the fiscal and monetary policies of the Federal Government should be conceived and administered to complement and supplement these activities of private enterprise in the maintenance of adequate effective demand.

Working under appropriate legislative guidance and authority, the several branches of the Federal administration dealing with fiscal and monetary policies and action must work within the framework of a common national policy, if our purposes are to be satisfied.

Experience has shown that common national policy in the fields of taxation, expenditure, Federal borrowing, Federal lending, and monetary planning cannot be achieved by the several Federal agencies working separately or by voluntary time-to-time collaboration.

Public works, social security, and like programs and activities give reality to the maintenance of adequate purchasing power, the securing of full employment and the optimum degree of private business activity, and would necessarily be considered in the formulation of the various phases of a unified national plan.

The fiscal plans of State and local governments and those of the Federal Government must be firmly associated lest the policies of these important taxing and spending agencies conflict in the discharge of their respective responsibilities.

The kinds of fiscal and monetary question that will require consideration in the post-war period are illustrated by the suggestions in the Board's pamphlet, "After the War—Full Employment," as to policies then probably desirable, in part as follows:

1. Retention of progressive (graduated) tax structure and broadened tax base, with major emphasis on the individual income tax and less reliance on the corporate income tax.

2. Sharp reduction in consumption taxes.

3. Adequate program of public improvement projects.

4. Expansion of public welfare expenditures. This involves partly an expanded program and partly a means of reducing State and local property and consumption taxes.

5. International collaboration to pursue internal policies designed to promote active employment, and to implement ways and means to open outlets for foreign investment, to promote world trade, and the effective world-wide use of productive resources.

C. Plans for Improvement of Physical Facilities

We recommend for consideration:

1. Preparation During the War for Expanded Programs of Development and Construction of Physical Facilities

a. With Private Enterprise, through the Reconstruction Finance Corporation or possibly one or several Federal Development Corporations and subsidiaries providing for participation of both public and private investment and representation in management—particularly for urban redevelopment, housing, transport terminal reorganization, and energy development. Government should assist these joint efforts through such measures as:

(1) *Government authority to clear away obsolescent plant* of various kinds, as, for instance, we have done in the past through condemnation of insanitary dwellings, to remove menance to health and competition with other or better housing.

(2) *Governmental authority to assemble properties for reorganization* and redevelopment—perhaps along the lines of previous grants of the power of eminent domain to canal and railroad companies for the acquisition of rights-of-way.

b. With Public Agencies, through public works and work programs, as recommended in previous reports of the Board and summarized in "III" of this section.

2. Plans, Legislation, and Organization now for:

a. Urban Redevelopment: In order to facilitate city building and redevelopment, improve urban living and working conditions, and stabilize employment and investment, we recommend:

(1) That metropolitan regions and cities set objectives and make plans now, for their whole urban areas and for the human, institutional, and physical problems that will follow the war. Federal and State agencies shall provide technical assistance and grants-in-aid to promote such planning, both for the long-time building and rebuilding of urban areas.

(2) The establishment of agencies, authorities, or arrangements in metropolitan regions and cities, broad enough to deal with the problem regardless of existing arbitrary boundary lines, and with powers adequate to deal promptly and effectively with the basic problems of urban reconstruction, including: public land assembly, ownership, and control; taxation; transportation terminal coordination and redevelopment; elimination of blighted areas, whether residential, commercial, or industrial; construction of buildings and facilities to assure adequate housing and working conditions and for provision of essential urban services such as sanitation, health, welfare, education, recreation, and transit.

(3) That Federal legislation be enacted authorizing such Federal participation in such agencies, authorities, or programs as may be necessary and appropriate in particular localities to carry out the foregoing purpose of stabilizing employment and investment and of promoting the development, security, and well-being of urban communities, such as assigning to an urban subsidiary or group of metropolitan subsidiaries of a Federal Development Corporation powers to finance or directly acquire and develop or redevelop urban properties.

Further material on problems of urban conservation and development are contained elsewhere in this report; in Our Cities, 1937; the Board's Report for 1942; and the pamphlet, Better Cities, issued by the Board in April 1942.

(4) Relocation and modernization of terminal facilities—air, rail, highway, and port—either these metropolitan authorities should be given appropriate powers or such powers should be included with

b. Transportation Modernization. We recommend: (1) *A National Transportation Agency* should be created to coordinate all Federal development activity in transportation, absorbing existing development agencies, and cooperating actively with regulatory agencies. The agency would be responsible for unifying Government transportation planning, administrative and development functions, and would assume leadership in consolidation, coordination, and reconstruction of transportation facilities and services.

(2) *Public Responsibility for Basic Transport Facilities* for all media of transport—air, rail, water, highway, pipes, etc.—through

Terminal reconstruction—planning and construction of modern unified terminals as an integral part of the city plan for urban areas, is a logical public responsibility for which the Transportation agency should undertake active leadership;

Federal credit for the provision of new facilities, and for the modernization and rehabilitation of selected old facilities such as new transcontinental transportation strips for all media, east-and-west and north-and-south, new aids to navigation and safety provisions for all modes.

(3) For each media, we recommend consideration of:

Railroads.—Consolidation of railroads into a limited number of regional systems by legislation with appropriate authority granted to the Transportation Agency to enable such a program to be carried out vigorously. Grade and curvature revision, construction of cut-offs and unification of important through railroad routes, application of modern signal and dispatch devices, and revision of trackage facilities to provide adequately for efficient and low-cost post-war traffic.

Highway Transport.—Under the leadership of the Transportation Agency and on the basis of powers inherent in the control of Federal development funds, the task of establishing highway transport on a modern and efficient basis after the war should be undertaken at once. Major emphasis must be directed to the provision of express highways and off-street parking in *urban areas.*

Under the guidance of the Transportation Agency distribution of Federal and State funds to municipalities should be revised to cope adequately with the urban problem.

Authority should be granted the Federal and State governments to acquire and finance adequate *lands and rights-of-way* for the account of State and local governments as well as for Federal development agencies to permit the ready undertaking of projects after the war.

Expansion of Air Transport.—The Transportation Agency should plan immediately for the conversion of the aviation industry from war to peace; for the development of an expanded and integrated system of airports and airways designed for both passenger and freight services; and for a rational program for coordinating an expanded air transport system with other types of transport.

New River and Harbor Developments for internal and foreign trade, as required to round out existing systems and where justified by existing or prospective traffic which can thus be handled more economically than by other means of transportation.

Pipe Lines.—The Transportation Agency should, in cooperation with pipe-line companies or through a public or mixed corporation, plan and carry out an enlargement and integration of the network of major pipe lines under which the Nation's essential liquid fuel supply can be assured in future emergencies.

(4) *Post-War Investment.*—The transportation industries, properly developed and coordinated, offer some of the most promising opportunities for wise investment. Planning and execution should be a function of the Transportation Agency and should seek to facilitate the transition from war to peace and provide America with the best that can be devised in integrated transport facilities.

These proposals are developed in the report of the Board on Transportation and National Policy, *1942.*

c. Energy Resource Development.

We recommend for consideration:

(1) *Electric Power.*—Through public or mixed corporations with private and public funds and directors to provide interconnected systems of common carrier electric transmission lines to deliver energy to all wholesale purchasers.

Coordinated public and private *development of water power*, power operation and marketing from publicly owned plants, such as Columbia River, Boulder Dam, and T.V.A., through regional agencies.

Rural Electrification—an expanded program of the type already planned by the Rural Electrification Administration.

These recommendations are developed from the Board's previous report on Energy Resources, *1939, statements in the last two annual reports, and current work for the War Production Board. See also page 51, of this Part.*

d. Multiple-Purpose Water Resource Development.

We recommend:

(1) *Continuing Federal assistanee* for comprehensive multi-purpose development and control of water resources.

Legislation should be adopted, or positive Executive action taken to promote the recommendations set forth in the Board's 1941 report on National Water Policy published on pages 39 and 371 of H. Doc. 142–77–1.

(2) *Pollution Control and Abatement* on rivers of the United States through passage of such a bill as provided in *S. 685 76th Congress, 3rd session*, with grants-in-aid, loans or other assistance to private and public bodies for approved projects.

See also previous reports of the Board, for 1934, 1941, and 1942, Drainage Basin Problems and Programs for 1936 *and* 1937, *and* Water Pollution in the United States—*House Document 155 and House Report 4314—76th Congress, 1st session and page 45 of this report.*

e. Land Development Projects

We recommend:

(1) Development of plans and agreement before the end of the war on policies for financing land development projects to be undertaken after the war, for *irrigation, clearance, and drainage projects*—in harmony with water and settlement policies; range, forest, recreation, and wildlife *land improvements*, including reseeding, reforestation, restocking, transportation, and administration facilities.

(2) *Conservation of land resources* through programs with Federal assistance for: Purchase and conservation or retirement of submarginal areas; expansion of soil conservation activities; fire control, etc.

A supporting statement for these recommendations is contained elsewhere in this report, p. 37. See also the Board's report Public Works and Rural Land Use—1942.

f. Housing. One of the most important outlets for the potential products of converted war plants will be the provision of adequate housing, both urban and rural. The Government should plan to initiate a large public housing program and assist in stimulating both private and public construction activities. Many of the wartime industries are already looking toward housing construction as a major possibility for use of their great new production capacities. The National Housing Agency is responsible for the preparation of plans and policies to develop wholesome housing for the American people.

Recommendations of needed actions by Federal, State, and local governments are included in the pamphlet, The Role of the Housebuilding Industry, *issued by the Board in July 1942. See also the Board's report,* Housing—The Continuing Problem, *1940.*

3. Legislation to Provide a Ready Program of Public Construction

The public construction we shall undertake when the war is over should be planned now, and adequate authority and funds for such planning should now be made available by Federal, State, and local governments. The program to be planned for should be of

such a character that it will facilitate, and carefully avoid hindering, our post-war industrial conversion to peacetime production, and should be designed, first, to bring our public facilities plant up to its proper level of serviceability, and, then, to develop further the economic possibilities of the Nation.

These recommendations are amplified and supported in the Reports of the Board for 1941 and 1942 and a further statement concerning them appears on pp. 55 to 59 herein. Progress in the preparation of public works plans is reported in Part II.[1]

In order to provide a "shelf" or "reservoir" of public construction projects of tested value, the Board recommends:

a. Continued and invigorated efforts to secure the preparation of **6-year programs or capital budgets** by Federal agencies, State governments, local governments, and other agencies, public and private.

b. **Lists of projects** should be prepared and classified according to size of the project, types and locations of skilled and unskilled labor involved, materials needed, rapidity of beginning, and flexibility of termination—all in relation to employment stabilization.

c. **Immediate inauguration of surveys, investigations and preparation of engineering plans and specifications** for selected projects through allocation of aids to Federal and non-Federal agencies from a fund to be administered by the President through his Executive Office; and reimbursed to the fund as part of the cost of construction of the project—all to permit rapid inauguration of work on projects in times of need.

d. **Advance authorization by the Congress of—**

(1) Procedures for grants, loans, guaranties of loans, leasing arrangements, or other devices for aids to State and local governments for non-Federal projects effective upon appropriation of funds by the Congress; and

(2) Construction of Federal projects in a 6-year program of selected projects. Such authorization should be effective upon appropriation of funds by the Congress, and not in itself involve any commitment for the immediate construction of the project.

e. **Appropriation for advance purchase of sites** of projects by appropriate governmental agencies.

f. **Development of methods of financing** public works projects and studies of related problems of investment, taxation, and the Federal, State, and local shares of responsibility for costs of various types of public works and related activities.

g. **Coordination of public works construction** at all levels of government, with other public policies which affect the level of business activity and employment, such as fiscal policy, social security policy, and policies of aid to private enterprise.

D. Essential Safeguards of Democracy

1. Measures to *prevent the rise of new industrial oligarchies* during the war or during the period of readjustment following the cessation of hostilities, including enforcement of anti-trust laws to break up monopolies and provide opportunities for small business enterprises.

2. Measures to *uphold the right of labor to collective bargaining*, fair wages and hours, healthy and effective working conditions, responsibility in organization and sharing in management.

3. Measures to *maintain the fair share of the farmers* in the benefits of an expanding economy with opportunity for higher standards of living and greater security.

[1] See House Document 128, Pt. 2.

III. PLANS FOR SERVICES AND SECURITY

A. Plans for Development of Service Activities

Legislation and organization to provide service for:

1. Equal Access to Education

We recommend:

(*a*) That *equal access to elementary and high school education* be assured all children and youth.

(*b*) That *equal access to general and specialized education* be made available *to all youth* of college and university age, according to their abilities.

(*c*) That *adequate funds* be made available by the local and State governments and underwritten by the Federal Government to carry out the recommendations presented above.

These recommendations are developed in the section beginning on page 68.

2. Health, Nutrition and Medical Care

Assurance of high standards of health and adequate nutrition for all. As a Nation we desire the conservation and improvement of the health of our people to avoid the wastage, through premature death, ill health, and accidents, of our most valuable national resource, and to eliminate the unnecessary costs of maintaining those who are rendered incapable by reason of neglect.

The Board recommends

a. **Health Measures** and adequate nutrition in order to eliminate all diseases, disabilities, and premature deaths which are preventable in the light of existing knowledge, through:

(1) The development of adequate public health services and facilities in every county within the country.

(2) The development of a health program for mothers and children ensuring remedial treatment as well as diagnosis and advisory services; maternal and child health clinics; and health services in the schools.

(3) Protection of workers whether in the factory or on the farm from unnecessary accidents, controllable occupational diseases, and undue fatigue.

(4) Continued support from public and private funds for public health research and education with a view to the progressive expansion of the frontiers of control over health hazards.

(5) Continued support for public and private agencies engaged in the dissemination of knowledge of sound nutritional principles and practices. Especial attention should be devoted to demonstration work in the schools, the factories, and farming areas.

b. Assurance of adequate medical and health care for all, regardless of place of residence or income status and on a basis that is consistent with the self-respect of the recipient, through:

(1) Federal appropriations to aid States and localities in developing a system of regional and local hospitals and health centers covering all parts of the country.

(2) Assurance of an adequate and well distributed supply of physicians, dentists, nurses, and other medical personnel.

(3) Expansion and improvement of public medical care for needy persons through larger appropriations and through increased cooperation by and with the medical and dental professions.

(4) Immediate action by government in cooperation with the medical profession to formulate plans which enable the patient to budget expenses over a reasonable period and to contribute toward the costs of care according to his ability, and which at the same time assure to medical personnel a decent livelihood commensurate with the high costs of their professional training.

These recommendations are expanded and supported in the section beginning on p. 60.

B. Plans for Underwriting Employment

To guarantee the right to a job, activities in the provision of physical facilities and service activities should be supplemented by:

1. Formal *acceptance by the Federal Government of responsibility* for insuring jobs at decent pay to all those able to work regardless of whether or not they can pass a means test.

2. The preparation of *plans and programs*, in addition to those recommended under Public Works (II–B–3), for all kinds of *socially useful work* other than construction, arranged according to the variety of abilities and location of persons seeking employment.

3. *Expansion of the functions of the Employment Service*, strengthening its personnel to the end that it may operate as the key mechanism in referring unemployed workers to jobs, whether public or private.

4. *Establishment of a permanent "Work Administration"* under an appropriate Federal agency to administer the provision of jobs of socially desirable work for the otherwise unemployed.

C. Plans for Social Security

We recommend:

1. *Development of Programs for Security and Public Aid* for inclusive protection against fear of old age, want, dependency, sickness, unemployment, and accident. The steps which are immediately called for include:

(*a*) Enactment of permanent and temporary *disability insurance.*

(*b*) Extension of coverage of *old age and survivors insurance* and continuing efforts to provide more adequate minimum benefits.

(*c*) Reorganization of the *unemployment compensation* laws to provide broadened coverage, more nearly adequate payments, incorporating benefits to dependents, payments of benefits for at least 26 weeks, and replacement of present Federal-State system by a wholly Federal administrative organization and a single national fund.

(*d*) Creation of an adequate *general public assistance* system through Federal financial aid for general relief available to the States on an equalizing basis and accompanied by Federal standards.

(*e*) Strengthening of the *special public assistance* programs to provide more adequately for those in need, and a redistribution of Federal aid to correspond to differences in needs and financial capacity among the States.

(*f*) Adequate measures to ensure the security of those serving in the *armed forces and their families.*

This recommendation is based on the Board's report Security, Work and Relief Policies, *digested in the pamphlet* After the War—Toward Security *and is amplified in this Part beginning on page 75.*

IV. PLANS FOR ACTION BY STATE AND LOCAL GOVERNMENTS AND REGIONS

We recommend:

1. That governmental *planning programs be decentralized*, as far as administratively practical to the States, counties, cities and appropriate regional agencies. Only in this way can we keep our post-war planning and action programs close to the people.

a. Regional Development. It is of utmost importance in the interest of national growth and prosperity that the development of the several regions of the United States (including Alaska and Puerto Rico) should be encouraged in every practicable manner. Some specific ways and means of accomplishing this purpose have been set forth in various reports by the National Resources Planning Board, notably in the recent memoranda upon the Southeast, Northwest, and Arkansas Valley regions.

In order to carry out the foregoing purpose of regional development in the national framework the National Resources Planning Board urges that the several regions take such steps as may be necessary, in such form as may be appropriate to the particular region, and which such Federal participation as may be desirable in the particular region. Forms of regional organization, methods of financing, and types of planning will naturally vary from region to region, but it is essential that the development of each region proceed in ways conducive to the welfare of its people and consistent with the balanced advancement of the Nation.

In view of the present emergency arising from the changing of a peacetime economy to a wartime basis and the necessity of reorganizing again on a peacetime basis, the National Resources Planning Board recommends that the several regional programs varying with the needs of the regions now center around the stabilization of employment and investment in the post-war period.

The National Resources Planning Board further recommends that every effort be made to coordinate the numerous decentralized field services of the various agencies to the Federal Government in order to render them capable of dealing most effectively with the problems of the regional economy and regional life. The objective might well be to achieve such a distribution of the services of government that each American, irrespective of where he happens to live and work, will share as fully as is possible the fruits, the opportunities, and the promises of our national resources and our democratic system of government. To this end it is recommended that, in line with an earlier recommendation of the National Resources Planning Board, the various departments and agencies of the Federal Government, through the establishment of uniform regions as nearly as possible, and closer interrelationships in the field which may be achieved by common regional centers, devote their resources to a more concerted attack on the chronic and acute problems of each region of the United States, and that in the strategy for dealing with these problems on a regional scale full account be taken of the potentialities of transportation and power networks for the development of sounder regional bases of subsistence and a more integrated national economy.

b. State and Local. To carry out their all-important part of the national post-war readjustment program, we urge that State and local governments take appropriate legislative and administrative action to increase the efficiency of local government and to:

(1) Assist private industry in the conversion of war plants, and the development of new post-war industries;

(2) Readjust war boom towns to maximum use of their new facilities, eliminating congestion and temporary structures as rapidly as possible and guiding migration of excess population;

(3) Strengthen employment services to direct demobilized soldiers and war workers to new jobs;

(4) Expand education, health, and welfare services (with appropriate safeguards) to meet the problems of the post-war transition period.

(5) Establish, where they do not exist, and adequately finance planning agencies to provide plans for post-war readjustments and for the development of unused resources;

(6) Prepare carefully planned programs, engineering plans, and specifications for needed post-war public works;

(7) Undertake large-scale urban redevelopment, passing necessary legislation enabling the acquisition of large blocks of land for this purpose;

(8) Construct improved highway, air, and terminal facilities;

(9) Facilitate the construction of needed new housing and the elimination of slums and substandard dwellings; institute land conservation and improvement measures; and

(10) Build up fiscal reserves for post-war work through increased taxation and debt liquidation during the war period.

Progress on planning in regions, states and localities is reviewed in Part II of this report, H. D. 128, Pt. 2.

The following statements, amplifying or supporting the recommendations of the Board, have been prepared by the staff or staff groups and primary responsibility is assumed by the individuals indicated in the footnotes under the heading of each section.

The subjects covered by these sections are:

I. Demobilization of Plant and Controls.
II. Promotion of Free Enterprise.
III. Urban Conservation and Development.
IV. Rural Land Improvement.
V. Valley Development.
VI. Energy Resources Development.
VII. Public Construction Program Planning.
VIII. Equal Access to Health.
IX. Equal Access to Education.
X. Equal Access to Economic Security.

Other subjects on which the Board recommends action are supported in detail in other publications. Particular attention is called to "Report for 1942," "Security, Work and Relief Policies," "Transportation and National Policy," and the series of pamphlets, "After Defense—What?", "After the War—Full Employment," "Better Cities," "The Role of the Housebuilding Industry," "Post-War Planning," "Post-War Agenda."

I. DEMOBILIZATION OF PLANT AND CONTROLS[1]

Postwar Utilization of War Plants

In any program of demobilization and conversion of war industry, it must be recognized that war plants differ in their adaptability to a peacetime economy. In consequence, no blanket policy with respect to the operation, conversion, retention in stand-by condition, and dismantling of war plants can be adopted. The exact character of readjustment required will depend also on the duration of the war and the nature of its termination. A long war will mean that industry will have a greater problem of adjustment, and deficiencies in civilian commodities will be correspondingly larger. An abrupt world wide stoppage of hostilities would call for a rapid readaptation of the economy to a civilian basis, whereas a settlement by stages would make possible a more gradual and orderly readjustment.

Demobilization and conversion policy must recognize the following types of plants.

1. Plants which may continue producing goods for military uses.
2. War plants which may be maintained in a stand-by condition with occasional use for experimental or pilot plant operation.
3. Plants producing multiple-use raw materials or semifinished manufactures likely to be in demand after the transition period.
4. Plants not converted to war production, but which have suspended or curtailed operations during the war period.
5. Plants producing military goods which may have civilian use.
6. Plants which produce semifinished manufactures and which require rapid conversion to facilitate the expansion of other types of civilian production.
7. Plants engaged in war production which may be converted to the manufacture of finished civilian goods.
8. Plants which will have no further usefulness and which should be dismantled or used for storage.

Each of these types of plants will require treatment according to the special problems involved, as suggested by the discussion which follows.

1. A few types of war plants may continue the production of military goods, the need depending on the size of inventories at the close of the war and requirements for national security after the war. The production of optical equipment and semiautomatic rifles, for example, may continue if the supply at the end of the war is insufficient to provide fully for future emergencies. Other new types of equipment, valuable for future use, may be developed during the war. In the event of a long war, however, it seems probable that stocks of military equipment will be adequate for national security.

2. Certain plants, such as explosives, bag-loading, shell-loading, and bomb-loading plants, present little opportunity for post-war conversion. Before the end of the war the military services should indicate the war facilities which they believe will be necessary to retain in stand-by condition, in order that local communities and operating industries can adjust their plans to meet the stand-by status of plants selected. The possibility of allowing active industries to use facilities such as power lines, water mains, and connecting highways during the stand-by period should be taken into account.

3. Plants engaged in the production of multiple-use commodities have usually had to make little if any readjustments to meet the requirements of the war period, and they will likewise require little reconversion in the post-war period. In this category are numerous producers of raw materials. It should be noted that the diversion of raw materials to the war economy has created substantial domestic deficiencies. In general, producers of raw materials will have little difficulty in finding immediate post-war markets for their products. Policy should aim therefore at avoiding a drop in production merely to conform to temporary decreases in consumption resulting from mass conversion of industry from wartime production to peacetime production. Raw materials of a durable nature and not requiring large space for storage should be stock-piled during the transition period, with Government assistance, if necessary. In particular, production and imports of alloying metals, because of their strategic nature, should not be allowed to decline. In this connection, certain foreign areas in need of reconstruction may need to maintain exports of raw materials in order to obtain exchange with which to purchase necessary equipment and other commodities in the international market.

The dividing line between the use of raw materials and many semi-finished manufactures is not distinct; in fact a large number of such manufactures are of the multiple-purpose type and, therefore, may be utilized by a wide variety of consuming industries which may require many months for readjustments to a peacetime basis. Unless accurate information and appropriate

[1] Prepared under the direction of Assistant Directors Ralph J. Watkins and Thomas C. Blaisdell Jr., by Dr. Glen E. McLaughlin and the staff of the Board.

guidance is provided for assuring a continued flow and an equitable distribution of these manufactures, the whole process of conversion to a civilian basis may be retarded and much loss of working time and output may result.

4. Many industries have not been able to convert to war production even though civilian requirements have been suspended or limited during the war period. These plants have had to curtail or suspend operations and many of them will have difficulty in reviving production in the post-war period.

Among the industries in this category are those for production of certain textiles, hardware, plumbing equipment and supplies, household appliances, rubber goods, and construction materials such as line pipe, screening, metal window sash, and metal gutters. These industries will require, in many instances, a rapid conversion of their sources of parts and semifinished goods in order to enable them to build up their own production. Hardships of the war period also will leave many of them in poor financial condition for an expanded output in the post-war period.

5. Some military goods can be used with little if any change by civilians. Plants making such goods should in general be kept in operation during the transition period until the bulk of their partially fabricated materials are exhausted. It will probably not be advisable to continue utilization of raw materials for these plants except to make possible the completion of products from semifinished materials on which considerable effort has already been spent. Even though finished products may have to be sold at some loss in the civilian market, this loss would often result in less sacrifice than the junking of accumulated parts. Among such military products that may be adapted to civilian use are tractors, trucks, jeeps, and photographic equipment.

6. Plants that have specialized in the manufacture of semifinished military goods will usually fall in a separate category, because typically their conversion must be effected before expanded production of finished civilian goods is possible. In most cases conversion will require only a moderate revision of processes. A good example of this class of plants is the steel rolling mills that have converted from sheet to plate production. These plants can be reconverted to the output of steel sheets, which will be required in renewed volume before the automobile, construction, and hundreds of other sheet-consuming industries can operate. A difficult problem of timing is involved, which, if not properly handled, may lead to long delays in getting dependent industries into operation. Before it will be possible for end-product industries to operate, all the types of materials or parts must be available in sufficient volume to enable the building up of minimum inventories and the assurance of a continued flow adequate to the needs of assembly lines. The lack of one essential part, for example, may delay the completion of automobiles. Some of the producers of semimanufactures have converted to war production over a period of many months, and delays are probable in a reconversion to civilian production. Assistance may be necessary in the form of priorities on materials and on special types of labor, as well as for financing.

7. Plants capable of producing finished manufactures fit into a later sequence in the production process. Wherever there is a conflict in requirements for materials, labor, power, or other factors of production, preference should be given to those stages of production which are prerequisites to succeeding stages. The whole matter of timing will have to be considered to avoid bottlenecks in conversion that may force idleness because of incomplete working inventories of supplies and equipment necessary for operation. The problem of balance involved here is similiar to that in conversion to war production. Lagging types of production must be given a fillip to help maintain a balanced readjustment.

8. Finally, plants not desired for conversion or stand-by use should be dismantled or used for storage and other local purposes. Usable machinery and equipment may be moved to new locations. Special attention should be given to the use of abandoned buildings for storage of strategic and critical materials in order to diminish dependence on foreign sources of supply in a future emergency. Thus both materials and building space would be preserved for a future emergency.

Plants to be abandoned should be dismantled promptly to encourage rapid community readjustment, to prevent the growth of blighted areas, and to make land space available for new ventures or for nonindustrial uses.

Technical Engineering Assistance in the Conversion of War Plants

The war program has required that many industries suspend most of their normal peacetime activities in order to produce large amounts of specialized war products. Military needs have required conversion of industry to meet new production specifications, and most production facilities have been utilized to the limit. Normal supplies of raw materials for civilian consumption have been drastically curtailed or completely discontinued. Supplies of some materials have been inadequate for essential war orders, and various preference ratings or priority systems have been necessary. Many new processes are being developed and new kinds of production lines introduced.

For example, the mass production principle has been applied to the construction of airplanes, ships, tanks, guns, and other heavy war products. Many of the peacetime processes were virtually uprooted and laid aside. Whole factories, such as most of those in the automobile industry, were shut down completely while their equipment was being converted to war production. These changes required assistance from the Government and also, to some extent, direction and control.

The major assistance given by the Government at the start was through the provision of credit. The Reconstruction Finance Corporation acting through various subsidiaries, including the Defense Plant Corporation, facilitated the huge capital expansion needed for war production. Other provisions for amortization under the Tax Law, advance payments on contracts, and Regulation V under the Federal Reserve Board, have also facilitated action. At the same time, war agencies were created to integrate the requirements of the military services and to assist and direct industry into the production of necessary war equipment.

Both the war agencies and the Army and the Navy supplied industry with technical assistance and instruction regarding standards and procedures.

The dissemination of information as to the type of war materials required was also helpful. In many cases a particular war product was broken down into its component parts and manufacturers were requested to select the parts they believed could be turned out with their facilities, or with the addition of a minimum amount of new equipment. One of the devices used to further such a program was the defense train, in which railroad cars with display materials were moved to the industrial towns of the nation and inspection arranged for local manufacturers. In these cars were displayed the various parts of equipment that small manufacturers could produce with a minimum amount of conversion. Government direction and coordination helped to make possible the large-scale subcontracting which eventually produced many of the parts required for the assembly of end products.

The longer the war continues the more extensive will be the expected departures in materials, processes, and products from their counterparts in normal peacetime operations. Such changes will depend also on the character of the war. Naturally, at this early date it is impossible to predict what the ultimate effect on industry will be. Each major military campaign may bring additional demands upon the production facilities of the country for new products or for modifications of old equipment, notably tanks and planes. In all such cases industry will be expected to meet the demands as quickly as possible and quite frequently to convert without much regard for expense or convenience.

This type of industrial development will undoubtedly bring along with it numerous technical changes. After the war many of these will result in placing on the market new products that may completely supplant some of the prewar products. Such changes have resulted from past wars, and there is good reason to expect that they will also follow in the wake of the present war, which is more dependent on specialized technical processes than any previous war. Consequently, the conversion to peacetime activities will not be easy.

It is possible that the reconversion may be extremely slow if industry is allowed to proceed without governmental assistance. The problems of industrial dislocation, of application of technological advances to peacetime production, of probable overcapacity among certain industry types, and of various degrees of undercapacity for producing certain civilian commodities will require careful formulation of broad industrial policies. It is in this field of policy making that government can assist industry to return to an efficient and useful peacetime status. Governmental assistance should be both economic and technical.

The degree of governmental assistance required will vary with the type of industry and also with individual factories and managements within each industry. For this purpose the factories whose peacetime operations were eliminated may be classed as follows: (1) those that were able to convert their production by manufacturing a related war product; (2) those that were converted to the production of an entirely different type of war product; and (3) those that were unable to convert their facilities to war production but were forced to shut down because of the lack of essential materials.

The first group will need the least technical assistance in returning to peacetime activities and, in many instances, will be able to resume normal activities almost as readily as factories that were able to continue production without product change. Their problems may quite likely be associated chiefly with difficulties related to overcapacity. The plants in the last two groups as well as those that were constructed specifically for the production of war equipment and material, present greater problems and may need much assistance. Some of the factories that had been shut down probably will never open again unless new uses can be found for them. Many manufacturing processes and products that were stable in the prewar period will not be supported by the new economy and may have to be completely altered or abandoned. The same situation will apply to many of the new war industries whose capacity is not needed in normal peacetime activities.

A considerable portion of such capacity must be retained, because it is scarcely conceivable that the Nation will reduce its military establishment to the pre-war size.

The post-war era of industry may generally require more highly trained personnel. Training of the more capable workers may have to be broadened. Much greater emphasis will undoubtedly be placed on the occupational efficiency, interest, and health of the industrial workers. Government assistance along these lines can be offered by such agencies as the United States Employment Service, the Bureau of Standards, and the Public Health Service.

In most cases a small manufacturing concern does not have the resources in terms of money and facilities or the properly trained personnel to conduct extensive research studies in its own field or related fields. The trend before the war was indicated when the Employment Service was created as a governmental agency to conduct, among other functions, occupational research and to develop techniques for selecting industrial workers. The results of such research became available for free use by any manufacturer. More specialized staff services of this type will probably become a major function of government and will include not only occupational and economic research assistance but also in some fields technical assistance in engineering and the physical sciences.

Immediately after the war, technical help will be needed by many operators of war industries in finding the most appropriate peacetime use for their buildings, equipment, and labor for making products that can be economically marketed from the communities in which their respective plants are located. A considerable portion of the technical information will have to be compiled with governmental aid in advance of the actual termination of the war. Since many industrialists are not in a position to see the effects of their operation on the total economy, Government has the obligation of surveying the resources of manufacturing facilities in war industries with a view to assisting in the determination of their most valuable place in the peacetime economy. In connection with this program, surveys should be conducted to supply manufacturers with reliable forecasts of the probable patterns of consumer demand and the related pattern of industrial demands for durable producer goods.

Financial Aids for Conversion

Numerous business enterprises will be in poor financial condition by the end of the war. This will be true especially of businesses concerned with the distribution of consumer goods, particularly if the war should be prolonged. Even those able to maintain a certain volume will find their opportunity for expansion limited by the character of their reserves. Likewise, some manufacturing enterprises engaged originally in the production of consumer goods which have been unable to convert to wartime activities will have to start anew. The problems of building working organizations and sales forces, establishing new financial affiliations, and the development of managerial policies will have to be faced. In the field of raw material production in which wartime demand has stimulated normally submarginal activity, the problem except where there are strategic needs will be one of transferring business management and investment rather than maintaining those businesses.

All of these various types of changed business activity will require financing. Just as the financing of wartime activity by government has produced new methods of financing, it will be necessary to devise new methods for the post-war conversion period.

A partial solution can be found in the immediate provision in the Federal tax laws for establishment of post-war conversion reserves limited to use within a short period after the termination of war contracts. In addition to any aid to business available in the form of conversion reserves, industry will have large requirements for outside capital. Concerns with great financial strength or ready access to major financial markets will be able to raise all or part of the new capital required for conversion, but it is clear that not all economically desirable enterprises will be able to undertake the conversion necessary for survival. The war has dealt a severe blow to existing small businesses and has in the main precluded the formation of new small enterprises. Further widespread disadvantages in the post-war period would lead to a marked concentration of control coupled with the spread of monopolistic practices.

Insofar as private individuals will have funds available in the post-war period, as a result of the wartime investment in government securities, financing may be relatively plentiful for new businesses. Some corporations will also have large liquid reserves which can ease the problem of financing new development. Many however will require assistance. In the areas dominated by small business, such as agriculture and home building, government has already developed banking institutions, namely, the Farm Credit Administration and the Federal Housing Administration, whose policies will have to be readjusted to the situations which will develop in the post-war period. In the fields of manufacturing and distribution, Government policies for the promotion of new businesses have never been adequately developed. The growing use of the powers of the Federal Reserve system with regard to installment financing suggests that we have a mechanism which may be utilized more fully than in the past.

Likewise, the activities of the Federal Reserve banks in their attempts to assist small businesses during depression have brought better understanding of some of the problems involved in financing enterprises attended with high risk elements. While under certain circumstances low interest loans from government can be helpful they are not a general solution to the problem involved. For example, a heavy debt burden on a small business, even if held by the Government, is not the form of capital assistance which is most helpful. However, other methods of Government participation in financing have been demonstrated.

Provision may have to be made for limited plant rehabilitation grants to be used for conversion of plants to peacetime production, with the grants contingent on actual conversion to production of peacetime goods within a specified period. This procedure may be appropriate for businesses with which governmental agencies would not be likely to place orders for public works projects and where dislocation of whole communities and consequent loss of public and private investment might be avoided by rapid conversion. Temporary subsidies for conversion should be viewed as an alternative to relief expenditures for a population that would be forced into idleness if the conversion were delayed or not undertaken. Since they would result in productive activity, they would yield gains to offset, partially at least, the costs involved.

Decentralization Policy

One of the aims of post-war conversion should be to achieve a better regional distribution of manufacturing activity. The desirability of greater industrial decentralization has long been apparent. There is considerable room for such decentralization despite the opposing advantages of regional specialization. Manufacturing activity could bring to agricultural regions a higher income, and a more balanced and diversified economy. In many instances, decentralization would reduce cross-hauling of raw materials and manufactured goods, and thereby considerably reduce distribution costs. In addition to such economic and social gains, there would be important advantages for our future national defense. A greater dispersion of our industrial capacity would permit a fuller and more effective utilization of our national manpower in any future wartime mobilization. Much of our capacity is now concentrated in areas vulnerable to enemy attack, either by sea or by air. The longer range and greater carrying capacity of planes of the future will make the Nation far more vulnerable to air attack than it is now, and the importance of inland locations for strategic industries will increase correspondingly.

The war expansion program, although bringing many new industrial facilities to nonindustrial areas, will tend after the war to increase the already great concentration of manufacturing in the region north of the Ohio and east of the Mississippi. More than half of the value of new war facilities has been located in this region, and almost all of this amount represents facilities adaptable to peacetime production. On the other hand, facilities located in other regions have to a great extent been such strictly wartime facilities as powder and explosives plants, which have little prospect for post-war conversion. Thus, in six Southeastern States over 70 percent of the value of Government financed war plants is for powder, explosives, and related plants.

This factor, of course, limits the extent to which decentralization can be effected through post-war conversion. It also increases the need for a strong governmental policy favoring the conversion of suitable plants in new inland manufacturing areas. This policy could be implemented by the favorable adjustment of the sale price of such plants, the extension of favorable terms of financing, or the promised award of Government supply contracts. The latter device would be especially effective in encouraging the shift of the aircraft industry to inland plants, since military demand, even on a reduced scale, will probably far outweigh civilian demand for some years after the war is over.

Continuation of Selected War Contracts

Selected war contracts in their present or renegotiated form should wherever feasible be continued in order to supply goods for future military needs and goods for reconstruction or development in foreign countries.

Military goods will be needed to maintain the nucleus of the United States armed forces and a probable international police force after the war. The plants producing the required goods exist today; and most of these plants are owned conditionally or entirely by the Government.

The events which led up to the entry of the United States into the present world conflict and the rapidity with which the war developed reveal the importance of maintaining a stockpile of materials in which this country is not self-sufficient or of military goods for which a long time is required for production. The War and Navy Departments should decide what and how much of these materials and goods should be stored. Production should be allocated and scheduled so as to enable areas which cannot readily convert their industries to the manufacture of peacetime consumer goods to provide the desired war products.

At the end of the war there will be outstanding many contracts calling for delivery to foreign countries of finished goods and equipment. The contracts providing for construction materials and equipment for specialized war plants will probably be canceled or revised to apply

to related peacetime plants. On the other hand, it will be desirable to continue the contracts providing equipment for civilian industries and especially those related to the supply of goods and materials for rehabilitation. In many instances, these will need to be enlarged and extended. Moreover, the contracts let during the war which provide for long run development of nonindustrial countries should be and are likely to be extended.

The war facilities selected for operations after the war should so far as possible be those in areas in which incomes are low or falling rapidly or in which there are few convertible plants. Under this policy, appropriate producers in the Southern States would be given some preference, since war plants in those States are predominantly not convertible, since that section is the lowest income area of the country, and since there is little alternative manufacturing employment. Other areas of smaller size may face problems that require similar relief. It should be noted, however, that specialized war materials and also products needed for rehabilitation of war damaged areas must be supplied in the main by our older manufacturing areas, because it is there that the production of these materials has been concentrated.

Speedy Liquidation of Unneeded War Contracts

Wherever possible, the Federal Government should follow a general policy of terminating unneeded war contracts immediately after the war. The only justification of continued production of war materials would be to cushion the shock of readjustment through a gradual tapering off of employment, but usually stabilization should be effected in connection with more productive work.

For those products needed by our peacetime military establishment, there is clearly a valid basis for continuation of war contracts. It should be pointed out, however, that in all probability we will have at the end of the war an inventory of war goods on hand and in transit huge in relation to the requirements of peace. Moreover, with the rapid rate of obsolescence of military material, it would be undesirable to build up more than a normal reserve of such goods.

Although something can be said in favor of continuing the production of military products salable in the civilian market, several important objections deserve mention. In the first place, by their very nature such products must be closely related to comparable civilian articles, or the civilian demand would never exist. Consequently, the conversion problem may be less difficult and require little time lag or labor dislocation. Continued war production would, in such cases, simply postpone conversion. Where a military product can be effectively used by civilians, it is clearly desirable to use up surplus parts or goods in process in completing such products.

A second objection to the continued production of war goods is that their consequent sale to civilians will, of necessity, reduce the potential demand for the regular civilian products. Naturally, goods not required by the military establishment but serviceable to civilians must be made available for such use rather than scrapped; but with conversion so largely dependent on the backlog of consumer demand, it would seem foolish to reduce this backlog demand, except where necessary to utilize accumulated parts. Strong pressure will be brought to bear by producer groups to prevent the sale of war goods in the civilian market, and the most effective way of heading off prodigious waste of useful military goods is to hasten the day of production of more useful civilian goods.

There is a last group of products, those neither needed by our peacetime army nor usable by our civilian population, with regard to which the objections against continued production are even clearer. Lacking both military and civilian economic justification, such production would be solely a measure to aid labor and manufacturers. Preferable by far would be outright benefits paid to labor in the form of dismissal wages or retraining or unemployment compensation, and financial aid to producers for conversion of facilities. Such measures would not involve the wasteful use of our raw material resources in worthless production. The dismissal wage has a further advantage in that it would enable those employees who so desired to return to former homes and former occupations. At best, continued production of unneeded war goods would consume valuable materials and thus add to the cost of the war. At worst, it would consume materials which may remain scarce for some time, and thus interfere with the eventual resumption of peacetime production. At the conclusion of the last war the Director of Steel Supply of the War Industries Board wrote to the Chairman of that Board as follows:

> * * * it would be better to immediately cancel all war material for which we can see no use after the war * * * We could well afford [the granting of subsidies to labor] rather than continuing the manufacture of high-priced munitions at an enormous profit to the manufacturer without real benefit to the Government.

This recommendation will be as valid after this war as it was after the last.

The immediate termination of unneeded war production would help to clear the way for speedy conversion of plants and equipment to peacetime production. Plant operators would be free to devote full energies to the conversion task. Idle plants and equipment would be

ready for any revamping or readjustment that might be necessary to return to civilian manufacture. Detailed plans for such conversion should, of course, be prepared well in advance of the end of the war and held in readiness for immediate execution. Some plants could be converted almost as soon as war production stops, whereas others would take many months. All, however, could achieve full conversion sooner if required to stop production of unneeded war material immediately and if materials and labor skills for conversion are properly allocated.

The Demobilization of Wartime Economic Controls

In wartime, controls over prices, over the utilization of men and materials, and over the consumption of consumer goods perform a vital function. They are necessary to promote the transfer of resources from production for civilian use to war work with economy, efficiency, speed, and equitable distribution of burdens and sacrifices. The economic conditions which necessitate the use of these controls during the war will not disappear as soon as peace is declared. There will be an immediate shortage of most goods and many industrial facilities. How rapidly the shortages can be removed will depend largely on the speed with which access can be regained to foreign sources of supply or with which the process of industrial reconversion can be accomplished at home. In some instances the difficulties to be overcome are likely to be so great that correction of the shortages may take many months, possibly even 2 or 3 years. If economic controls are abruptly abolished at the end of the war the large consumer demand which may reasonably be expected might well provoke violent commodity price rises which cannot, to any material extent, be self-correcting, owing to the slowness with which it will be possible to increase supplies. While holders of stocks obtain large windfall profits and speculation is stimulated, consumers will be mulcted and the progress of economic readjustment impeded. Retention for a while of some of the wartime controls will be imperative. But it is clear that the controls should be relaxed as far and as fast as conditions warrant.

There can be little doubt that some degree of price control should be retained during the transition from the war economy to a normal peacetime economy. It may be unnecessary to maintain an over-all control for very long, and the general price ceiling should gradually give way to a system of selective controls confined to commodities which remain relatively scarce. In some instances it may be expedient to replace the maximum price with some other form of control.

Lack of cargo facilities or the imperative needs of hungry millions abroad may cause such goods as sugar, tea, coffee, and meat to remain in short supply and make continued rationing of them for a time essential. But if consumers durable goods are to be rationed at all it must not be solely because they are scarce but because it is of importance for national welfare to allow some persons a preference over others.

Nondurables, such as foodstuffs, can be divided into rations of any size so that each person can be allotted an equal amount. Durables are not so divisible. If the available supply is too small to enable all would-be buyers to obtain a complete unit some of them must go without any. So far in this war, it has not been necessary to ration scarce consumer durables on a wide scale. Radios and washing machines, for example, have been left to be sold to any who wish to buy. In fact, to date, priority control of durable consumer goods has been confined mainly to transportation equipment (automobiles, tires, and bicycles) and construction materials. These are being made available only to those to whom it is most important in the interests of the Nation's health or the progress of the war program to grant priority.

Deficiencies of consumers goods will probably increase the longer this war continues, and thus the more stringent the war regulations will become. It is likely that standards of preference for many goods will continue to be needed during the transition to a peacetime economy. Naturally it is desirable to keep the post-war rationing of consumer goods to a minimum.

During the war the construction and use of plant and equipment and the distribution of materials are being governed by an elaborate system of priorities and allocations. In some instances the cessation of the war will result in the release of plant facilities ready to turn out consumer goods. In most instances, however, it probably will be necessary to rehabilitate and reequip plants which have been used for war production or which have been idle. Wherever the period required for reestablishment of peacetime operations is long, it may be necessary to allocate the finished products as well as the materials, machines, and tools needed to reestablish plant operations on a peacetime basis.

Such wage controls as we impose during the war period will be primarily in the form of ceilings. There will be little occasion for the setting of floors. In the peacetime readjustment the situation will be reversed. If any wage controls are desirable they will need to take the form of minimum rather than maximum levels.

II. PROMOTION OF FREE ENTERPRISE[1]

Assistance in Developing New Processes and Improved Products

Manufacturers, especially those with unused facilities during the war period, have an opportunity to contribute to post-war adjustments through industrial research designed to develop new processes and improved products.

In the prewar period organized research work in the physical science and engineering fields was done by industry, trade associations, governmental agencies, and by technical and other educational institutions. Industry contributed the greatest share of funds to technical research.[2] Research expenditures by industry, with the exception of some of the chemical industries, however, represented a very small part of the value of total sales. According to reports of the United States Department of Commerce [3] the synthetic organic chemical industries as a group during the period just prior to the war spent funds on research in pure science and practical application amounting to nearly 5 percent of their total sales volume. During the same period American manufacturing industry as a whole spent only approximately one-fifth of 1 percent of its total sales volume on research.

Expenditures on technological and economic research have usually led to lower costs, wider markets, and improved living standards. The results of research, when actively utilized, have stimulated the evolution of certain industries. Some producers, however, have been reluctant to disturb their methods and processes, and many of them, both large and small, have not spent time and money on technological research. Government can make a substantial contribution to the progressive development of the Nation's industrial structure by organizing and assisting in the coordination of industrial research in the physical sciences. Government may also stimulate such research by making certain that none of its policies tend to hamper the development of new products or processes.

The modern government is in an excellent position to foster an active research program among industries, because it has access to vast amounts of scientific data and knowledge. It may obtain such information from many industries, from the Nation's private or quasi-public research agencies, and from its own agencies maintained for conducting research and for supervising standards. It became obvious early in the defense program that the Federal Government would have to assist industry actively by inaugurating a comprehensive research program to counter the enemy's moves in the development of new equipment and materials. An even greater service can be rendered both to the war and to the post-war reconstruction through integration of governmental and nongovernmental research facilities. Since the start of the war this has become a problem of the highest importance because of the limited availability of scientific specialists.

Under the stress of war it became desirable for the Federal Government to "farm-out" certain of its research problems because frequently the best nucleus laboratories for research on a particular problem were in a university or in a private company. This contracting for research is in line with recommendations made in 1938 by the Science Committee of the National Resources Planning Board, "that research agencies of the Government extend the practice of encouraging decentralized research in institutions not directly related to the Government and by individuals not in its employ." [4] Such a process may range from a casual request regarding Government needs to a carefully formulated major project supported by Government funds.

Research work conducted under the guidance of the Federal Government, or some one of its bureaus, may perform its greatest service in helping to solve those technical problems wherever solutions by industry are hampered by inertia, prejudice, and monopolistic influences. Frequently the development of a particular industrial method is unnecessarily delayed for long periods, and no progress is made until some drastic change, caused either within or without the industry, breaks the bottleneck and permits the trying of a new method or new process. A well planned Government research policy would do much to anticipate and alleviate such conditions.

The objective of a technological research program fostered by the Federal Government should be to promote the welfare of the Nation by helping the progress of its industries, to raise the standard of living by increasing the quantity and quality of goods avail-

[1] Prepared under the direction of Assistant Director Ralph J. Watkins, by Dr. Glenn E. McLaughlin and the staff.

[2] *Research—A National Resource.* Part II—"Industrial Research," prepared by a committee of the National Research Council for the National Resources Planning Board, 1940.

[3] U. S. Department of Commerce, *Domestic Commerce,* Vol. 30, No. 13, Sept. 24, 1942, pp. 9–10.

[4] *Research—A National Resource.* Part I—"Relation of the Federal Government to Research," 1938; see also, *Integration of Federal and Non-Federal Research,* Technical Paper No. 9, 1942, both by the National Resources Planning Board.

able for distribution, to conserve scarce and strategic resources in the Nation by developing substitutes or more efficient methods, and to discover uses for available resources which have been entirely or partly neglected by private enterprise. Scheduling of such research work in peacetime would supply employment of a high order of usefulness to thousands whose talents and abilities might not otherwise be utilized.

Private research has been especially slow in discovering uses for available resources that do not have obvious economic value. There are good financial reasons for this reluctance. Concerns that might be interested are usually engaged in close competition with other firms and consequently do not have the available capital or facilities for the development of such resources, unless previous work or knowledge indicates that expenditure of funds will yield tangible results in a short time. The Federal Government, on the other hand, may be in a position to promote such activity because charges can be distributed against possible benefits that may accrue over long periods of time.

Governmental participation in research programs to develop new industrial processes and to improve products carries some major responsibilities. The Government must insure that the benefits derived are nationally available and not limited to favored special interest groups. Government research bureaus must serve actively as disseminators of information, because in most instances the research process is not complete until the results are conveyed effectively to the persons and industries most likely to utilize them. The National Research Council in its report to the National Resources Planning Board on *Research—A National Resource, Part II.*—"*Industrial Research*," made several recommendations toward this end regarding policy for governmental research. The report urged that the Federal Government should:

(1) Promote systematic and complete publication of abstracts of scientific literature,

(2) Increase tangible support to the National Bureau of Standards for research on standards with ample funds for adequate publication and distribution of the Bureau's findings,

(3) Increase appropriations to government scientific bureaus for representation at technical meetings and for publication of findings,

(4) In general, provide funds for cooperation with industrial technical workers and educational institutions.

Government research assistance may take the form of furnishing funds, data, or facilities. As Government funds enter the research field, systematic information must be collected and correlated to use as a basis for the selection of research activities. Proper estimates from the national viewpoint must be made as to the relative values of research programs on a fair and scientific basis or otherwise the selection of research activities might be determined by political forces. Adequate data must be made available for determining whether particular research projects are to be conducted by the Government agency or are to be subsidized by grants to industry, to research institutions, or to educational institutions. The responsibility of Government research will also include selection of the best possible technical personnel and maintenance of close contact with developments in leading educational and research institutions in each field of knowledge.

One of the greatest barriers to the development of new products is the abuse of the legal monopoly privilege conferred by our patent laws as administered by patent-office procedure, court interpretation, and legal devices for the extension of patent protection. Patent reform is necessary if the invention and production of new products is not to be seriously hampered in the post-war economy.

Many of the proposals advanced for patent reform are in the nature of correcting the notoriously expensive and time-consuming procedures rather than any direct change of the law. Establishment of a single court of patent appeals, for instance, has been suggested with provision for the appointment of technical advisers as permanent officials attached to the court. It has also been suggested that in the public interest or in the defense of a worthy but perhaps impecunious inventor's interest, the Patent Office, or a new Patent Commission, be empowered to intervene in any judicial proceeding involving the validity of a patent.

Advocated changes in administrative procedure include proposals to measure the period of patent protection from the date of filing the application rather than from the date of issue, thus penalizing the manufacturer for each additional year consumed in delay and interference. The issuance of many unmerited patents might be forestalled by the publication of applications to make possible the challenge of patents on grounds that might otherwise be unknown to the Patent Office.

The great flood of applications for patents, increasing from year to year, contain a heterogeneous assortment of major discoveries and minute improvements and changes of existing products. To the inventor goes the exclusive right to make, use, and sell the fruits of his discovery for 17 years. There is a possibility that social gain might result from ceasing to handle all patents indiscriminately. Administrative procedure may be simplified by limiting the classes of invention which are patentable by the substitution of copyrighting for design patents and others not directly related to technological changes. Foreign experience suggests distinguishing between "primary" or "basic" patents and "secondary" or "improvement" patents as to the term of the grant and the permissible scope of restrictions. The elimination

of renewals, reissues, and even disclaimers has been urged in some quarters as unnecessary complications.

The most controversial of all reforms are those dealing with the privilege of assignment of patents since here the field of industrial concentration and monopoly control is entered. To regulate "patent pooling" and aggregation, the limitation of the number and character of patents assigned to a single assignee has been advocated. Compulsory licensing in conjunction with prohibition of all licensing restrictions on price, geographic distribution, and use is urged in order to put all patent rewards on a straight royalty basis with reasonable rates administered by a patent council. More far-reaching in scope is the suggestion for the condemnation acquisition of suppressed patents by the Government when it is necessary for the general welfare; and the suggestion for prohibiting altogether the assignment of patent rights in order to limit monopolistic influence and to assure inventors whatever rewards their patents may yield by direct exploitation or by outright sale.

There are two general ways in which the Government can attack the problem. First, it can retain the present patent laws and do as much as possible to simplify the legal procedure. Second, it can revise the patent laws directly to eliminate the impediments to the most rapid and most effective use of new inventions and technological innovations. Here, clearly, is a problem of great economic importance on which public policy must be formulated. On the one hand, the incentive to invention and innovation must be preserved; and on the other hand, we must see to it that our legal devices and procedures are not prostituted to the ends of monopolistic suppression of new ideas, new processes, and new products.

Concentration of Industrial Production

The productive capacity of an industry may become concentrated in the hands of a few large corporations as a result primarily of the exercise of financial market controls and not mainly because of efficiency attributable to the size of operation. One corporation or a group of corporations may acquire control of a large proportion of the producers in a given industry. In such instances, the aim is usually to realize profits through control of market rather than through industrial efficiency.

Industrial concentration may take the form of vertical extension; a large concern may seek to acquire successive stages of production and distribution in order to avoid contact with uncontrolled markets for intermediate goods. This effort may be motivated primarily by considerations of efficiency but at times it is used to take unfair advantage of nonintegrated producers who are restricted to only one or two stages of production.

To take another instance, a large industrial concern may branch out into unrelated fields in order to find an outlet for its accumulated capital and the new techniques developed by its research and production staffs. In such instances a subsidiary organization is usually formed but the production policies are likely to be set by the parent group. In this manner a concern operating in an old industry may acquire control over an unrelated industry, often in a new field. Automobile companies, for example, have entered into many nonautomotive industries, over which they exercise a great measure of control.

In order to restrict large corporations to the activities in which they are inherently more efficient and in order to see that low costs lead to low prices, more discriminating prosecution of antitrust laws is necessary. Harmful restraints on trade can be removed only by a greater activity on the part of government. Public policy needs to be concerned not only with the establishment of open prices but also with the maintenance, wherever possible, of free access of new business to new and old industries in order to provide opportunities for independent enterprise and the bringing of fresh ideas into an industry. Wherever small business units can operate with equal or greater efficiency in an industry, public policy should aim at vigorous protection of such units against financial market control by monopolistic powers.

To a great extent, the war production program has led to the concentration of contracts in large concerns. Generally the procurement agencies preferred to deal with concerns able to handle very large contracts, of clear financial responsibility, and with extensive administrative and engineering staffs. About 70 percent of the value of all war contracts to July 1, 1942, has been concentrated in 100 corporations. About 9 percent of the total has gone to one corporation. In recent months an effort has been made to distribute war contracts more widely and to have prime contractors place orders with smaller concerns. Despite this attempt, the war will clearly result in a marked concentration of production in many of our basic industries. At the end of the war, if not before, the Government should arrange for the operation of many plants by new producers in order to further competition and to guard against the stagnating nature of monopolistic control.

Regulation of Large-Scale Business Units

In industries in which production units have to be large because of the economies of scale or integration, there are clearly special problems of governmental policy. Such large concerns possess great financial power

and, unless subject to some degree of public restraint, may seek and achieve monopolistic control over the market. Since in these industries it is not economically desirable to break up concerns into smaller units, the remedy must lie in effective social control. One of the objectives of this control should be the restriction of these large business units to the fields in which the economic advantages of large scale operations are clearly present. Thus, large units must be prevented from achieving control over other forms of production and distribution in which smaller business units may operate with equal or greater efficiency.

Assistance to Small Business Units

To the extent that undue concentration of industrial production is avoided, the Government can strengthen the position of small producers, distributors, and cooperatives. It is clearly desirable in a democracy that government assist small business units wherever they are economically efficient. It is, therefore, desirable that these businesses be given a chance to develop their full effectiveness unhampered by arbitrary restraints imposed by large competitors. As already indicated, the post-war period will find many small businesses in a weakened position, particularly in their relationship to large-scale units which have shared more fully in wartime production. Many of these smaller units will have been inactive during the war and indeed many small businesses will have been forced to liquidate their operations. Large corporations even in nonwar industries usually have been able to survive because of their ability to get war contracts and thus to hold together their technical and administrative staffs. These opportunities are not open to most small producers in nonwar industries. Consequently, government should develop means of assisting these small businesses in terms of technical engineering advice, access to materials, favorable terms of financing, and marketing aids.

Mixed Corporations with Joint Private and Governmental Participation

In some sectors of the economy, public interest may be served better by the use of mixed corporations than by either wholly private enterprise or outright government ownership and operation. A variety of arrangements are possible depending mainly on the relative extent of government participation. On the one hand the government's proportionate investment in the corporation might be so great that the corporation would be operated essentially as a public enterprise. On the other hand, private stockholders might own a majority interest and government representation be concerned solely with matters relating to public policy. In any case, the structure of a mixed corporation and the special authority delegated to government directors can be made to vary with the functions of the corporation and with the need for promoting the public interest.

The mixed corporation was used as the type of organization for the Federal Intermediate Credit Banks and the Federal Home Loan Banks. In a sense the Federal Reserve Banks are mixed corporations, at least in terms of management. Moreover, many private concerns are technically taking on the character of mixed corporations through acquisition of stock by the Reconstruction Finance Corporation. As a rule that Corporation has not interfered in the operating details of these concerns, but has usually exercised only the prerogatives of a creditor through loans or the purchase of preferred stock. The special corporations set up for large-scale rent projects by the Federal Housing Administration are of the mixed type.

Outstanding examples of mixed corporations in Great Britain and the Dominions are the South African Iron & Steel Corporation, the Imperial Airways, and the Anglo-Iranian Oil Co. In the Anglo-Iranian Oil Co., the British Government owns more than half the common stock but is restricted by agreement to minor representation on the board and to matters involving foreign and defense policies.

In the post-war period, the mixed corporation might be an effective form of organization for certain plants in those industries of crucial importance in wartime and in which government has made great wartime investments. In this category are aluminum, magnesium, other basic metals, synthetic rubber, some chemicals, shipbuilding, and aircraft. Through the mixed corporation, government could participate in the selection of the areas and the business units which are to continue to operate in these industries. Moreover, government representatives could check the degree to which public assistance to these industries in the forms of contracts or special subsidies was being used to develop improved products and to reduce costs. Other fields in which this type of joint enterprise could be used for new operating units are urban redevelopment, housing, transport terminal reorganization, air transport, communications, and electric power.

In order to equip these mixed corporations with adequate authority to carry out development programs, government might give them special rights, such as the authority to use the power of eminent domain to acquire necessary properties. Such a set-up might facilitate the assembly of properties for reorganization and more efficient operation. Another sphere of action for these joint efforts might be the control for the government of certain patents and properties seized from enemy aliens, and of domestic patents of basic necessity in the production of raw materials. In this latter instance the corporation might choose to operate the properties directly or license them to private operators.

III. URBAN CONSERVATION AND DEVELOPMENT[1]

Responsibility for Urban Problems

The problems of cities have been an important concern of the National Resources Planning Board almost from its beginning. This interest has run through all the work of the Board because virtually all national policies and plans have their effect upon urban communities and ways of life. The cities are the focal points of the Nation, they contain the majority of the people and affect the welfare of the country at large. The Board's concern with cities has taken form in planning assistance to localities, both directly and through the States, and in a series of reports. The first of these was the report of the Urbanism Committee in 1937, *Our Cities—Their Role in the National Economy.* This was followed by reports on *Urban Government*, *Urban Planning and Land Policies*, *Federal Aids to Local Planning*, *Housing Monograph Series*, and *Long-Range Programming of Municipal Public Works.* The pamphlet, *Better Cities*, projected outstanding problems and set forth guiding principles for war and post-war redevelopment of cities.

All levels of government—Federal and State as well as local—have responsibilities to the people who live in cities. Together these governments must work out the responsibility and participation of each in planning, and in provision of services and facilities for city dwellers.

Rebuilding the physical city cannot be isolated from the administrative and fiscal program or the measures for social and economic improvement which are given emphasis in other sections of this report; nor can it proceed independently of the day-by-day changes in physical or governmental structure and activities which are caused by immediate needs.

The Heritage of the Past

The urban America of tomorrow is in the making today. The longer the war lasts the more the changes produced by the war affect what we will be able to do when the war is over. The rebuilding of urban America does not start with a clean slate. By and large we are not building new cities as we were a century ago but are forced to reconstruct old cities, many of which have been created in response to conditions which have ceased to exist.

We are faced with the reality of nearly 75 million of our inhabitants living in 3,464 towns and cities, some of which are mushroom communities and others of which are decaying in whole or in part; some of which are bankrupt, and others of which find it extremely difficult to carry on under accumulated debt and shrinking revenues, despite rising tax rates. Most cities have acute problems of housing and transportation, and virtually all find it impossible to cope with the responsibilities for maintaining a minimum standard of living and a minimum of social security and cultural opportunity for their people in the face of an uncertain economic base, inadequate legal power, and widespread public inertia.

We have reached a point in the development of urban America where the ceaseless growth of the past has come to an abrupt halt, and when we can no longer rely upon an uninterrupted increase in population and economic opportunity to make up for our failure to assume responsibility, and for the wreckage that has followed in the wake of reckless and uncontrolled expansion that has been characteristic of our past. So much more of our population is urbanized, and so much more is the welfare of the nation as a whole dependent upon the healthy functioning of our cities, that the improvement of urban America has become of paramount national concern, from which city and country alike receive the benefits.

Emerging Trends

Many have come to question whether our cities, especially our great metropolitan concentrations, have reached a point where their very size and complexity have become cumbersome and where they can no longer function efficiently. Disturbed by the declining rate of growth and, in some cases, the actual decrease in the size of cities, others are asking whether we have come to the end of an era and are now entering a period in which cities will be shrinking in size and importance. The relative growth of suburban and satellite towns, and the development of huge war industries on the peripheries of cities and in areas formerly exclusively rural, presage in the minds of many the emergence of a new pattern of industry and settlement in this country. The rapid technological development in transportation, particularly of the modern airplane, has been interpreted by some to mean a revolutionary change in the relationship between hitherto distant places, in which some cities will lose their functions as way-stations and concentration and intersection points in the movement of goods, people, and ideas. Some regard the newly created large-scale war industries in sparsely settled territories as a challenge which the older industrial centers will ultimately have to meet. The modern war

[1] Prepared under the direction of Director Charles W. Eliot, by Robert B. Mitchell, Chief of Urban Section, Louis Wirth, Consultant, and members of the Board's staff.

plants on the peripheries of our great cities will undoubtedly furnish keen competition to the older and relatively obsolescent industrial plants in the centers of cities, when the time for reconversion to peace-time production comes, and may enormously accelerate the further de-aggregation of urban areas and accentuate the blight of the urban cores.

The mechanization of agriculture and the new world conditions which the American farmer will have to face after the war may change the relationship between city and country profoundly, and reverse many of the trends of both urban and rural development. The war-born awareness of our hitherto unutilized productive resources, together with the tremendous technological advances which the war has stimulated, has given to American industry and to the American people a vision of a greatly enlarged horizon of the possible. The rekindled hope for a fuller realization of the substance of democracy in the post-war period, based upon the prospects of full employment, a wider distribution of physical comforts, education, recreation, health, and cultural opportunity, widens the chasm between the actual conditions of life as we find them among the masses of men in our cities and the aspirations for a better life for which the American people are clamoring. The kind of cities that the American people want will be significantly influenced by the degree to which their ideal of freedom and security and their conception of the satisfactions worth striving for can be shown to be realizable in our generation and by the degree in which science, planning, and statesmanship can show the way to translate these ideals into realities.

Planning the Future

The background, the setting, the physical condition, the problems, and the opportunities of each city are so different that in urban redevelopment there is no one formula for either an ideal pattern or a procedure which will fit all localities. Because the post-war cities are in the making today, and because sound plans cannot be made overnight, metropolitan regions and cities must set objectives and make plans now for the special problems of transition to peace, for adapting their programs to changing State and Federal policies and participations which may be set up to meet the human, physical, and institutional problems that will follow the war and for the cities' long-time conservation rebuilding and development.

These plans must be comprehensive in scope. The physical structure of a city's streets and public buildings, its residential, commercial, and industrial pattern, is the embodiment of the socio-economic forces which have shaped its character. Consequently, the plans which a city draws for its future development must be based on sound economic and social objectives, determined in the light of national policies and based on existing conditions and their probable direction and rate of change both within the city itself and in the areas affecting its economic life. Likewise, the city must examine its administrative machinery, governmental powers, and financial organization in order to determine how effectively it may be able to translate its plans into action and provide the services which urban life calls for. Lastly, the city must work out the objectives for its physical development which are contingent upon these other plans. All of these objectives must be clarified by each community for itself. The stimulation and guidance of this self-clarification, however, is the obligation of the State and the national government. Such planning is the essence of democracy. It is the prerequisite of any reconstruction of urban life under the democratic system.

Economic Objectives and Programs

Planning for full employment, now under way in the Federal Government and within individual industries must be supplemented by local planning in order that local effectiveness of national plans may be assured. It is essential that each city or metropolitan area determine the desirable and feasible economic objectives toward which the planning efforts are to be directed. In general, the aim will be more satisfactory conditions of life for the people in the area consistent with the wider regional and national interests. National policies and standards will have to be adapted to local conditions and translated into specific guides for community action.

An understanding of the local economy, both before and during the war, and an assessment of its prospects in relation to those of competing areas is basic. The local economy should be judged in the light of its ability to provide a satisfactory standard of living and resources to maintain essential urban services. Not only existing forces and trends, but possible means of strengthening the economic structure of the area should be explored. Special problems of reconversion to peace-time production and the possibilities of providing full employment as well as provision for the training and placement of returning military men should have immediate and intensive study by local government, business men, and labor. Plans must now be made to meet these problems by both public and private action. Appropriate measures may include: appraisal of the soundness of the existing economic base of the community; development of local resources; the need for and the capacity of the community to attract, sustain, and develop new industries; improvement of facilities, improvement of living conditions; provision of tech-

nical or vocational training; improvement of public administration; adjustment of taxation; timing of public works expenditures; making available capital for investment; establishment of cooperative enterprise, and many others.

State action to facilitate local programs should include any necessary and appropriate permissive legislation, State plans and programs for industrial development and resource conservation, and technical assistance to localities in planning for economic rehabilitation and development.

Federal action, in addition to other measures recommended in this report, should include specifically:

1. Coordination of Federal policies and programs affecting industrial location, in accord with a plan for desirable long-time trends, including: freight rates and transportation policy; loans to corporations; construction and leasing or sale of plants; the use of public natural resources or power; labor and welfare policy.

2. Provision of technical assistance to local planning agencies including techniques of study, information concerning national and regional economic forces affecting local industries, and information concerning national policies or programs that will affect local economics.

Social and Cultural Objectives and Programs

In other sections of this report are discussed recommendations for extensions of social services which have important bearing on city life. Such are the following: equalization and extension of educational, recreational, and cultural opportunity, adequate provision of health services, and strengthening and broadening the provisions for social security. Cities and metropolitan regions should give early consideration to their part in arriving at these objectives and should weigh the effects of the proposals upon their other plans and programs.

Recognizing that many long-time social problems of cities have been aggravated by the war, cities should give greater attention to the prevention and control of delinquency, of crime and disorder, disease, family and community disorganization, and the social maladjustments and frictions that go with war migrations of people and war distorted communities.

On the other hand, thought should be given to the possibility of conserving and adapting those organizations and neighborhood institutions that have come into being through civilian defense, rationing, and selective service. These institutions and the spirit of cooperation and neighborly feeling which the war has generated may give new meaning to urban community life.

Federal agencies are more aware of these problems and opportunities than ever before, for they have been working directly with localities handicapped in the face of sudden overwhelming burdens imposed by mass migration and population concentration. Hospitals, schools, and recreation services have in some communities been expanded and utilized to fullest capacity in an effort to meet the new demands. New types of services have been developed, such as the day nursery school program to care for children of war workers. The fact that many communities are now operating, however inadequately, services they never had before, and that others have become acutely conscious of their shortcomings, presages a broader conception of the social needs which must be met when the war is over. The emergency has forced a realization of the importance of services which in peacetime were disregarded with equanimity. Recreation is an excellent case in point.

Recreation has long been a marginal governmental service. With the exception of the largest cities, local funds have been meager and generally channeled into park facilities and maintenance expenditures. With the introduction of W. P. A. and N. Y. A. there was a great increase in leadership, cultural, and adult education programs; but these were emergency measures conceived primarily for the purpose of providing work relief. Now new programs have been created to meet the clearly seen recreation needs of workers and soldiers. This new development of recreation as a morale and efficiency measure is a recognition of its social and psychological importance to modern living.

Housing is another example. Overcrowding and further deterioration of existing housing facilities in industrially expanding areas and the virtual cessation of new construction during the war have made many communities aware of their housing needs, their slums, and blighted areas. This recognition has become a challenge to many communities to formulate post-war housing, slum clearance, and rehabilitation programs.

As with recreation and housing, so with the other community services such as health and welfare. In the world we are fighting for, they cannot be relegated to the background to be hauled out again only when we must provide work for the unemployed or stamina to conquer the enemy. There is no opportunity now to apply any but the minimal standards of service, but when peace comes, plans must be ready in cities for the reconstruction and reorientation of their social services based on standards of adequacy consistent with our resources and the spirit of our war aims.

Administrative Objectives

No amount of economic and social planning can be realized without administrative powers and organization commensurate with the scope of the plans. The

war has created tremendous problems for the municipal governments. Their services have been far overtaxed; many new facilities have been constructed in haphazard fashion; new and oftentimes conflicting direct relationships between local and Federal agencies have bypassed the States in the effort to achieve maximum speed of operations; the financial base of cities has been further disrupted by the suddenly accelerated dispersion of factories and homes and the tremendous increase in in-migrant population; their whole industrial and population base has in many cases been completely changed. Almost equally drastic changes, though probably in the opposite direction, are in prospect at the close of the war. The problem for the administrators in municipal governments is staggering.

There are certain elements in the situation which can now be foreseen. It is not too early to plan for the lines of action to be followed in order to provide a sound and flexible framework for the solution of foreseeable difficulties. Municipal departments must plan now for the extension of services and construction curtailed during the war. Thus the public works expenditures which must surely come to cushion the shock of conversion unemployment immediately following the war will be used effectively in ordered fashion. Rehabilitation of returning soldiers for civilian employment will require a wide extension of vocational, adult education, and therapeutic facilities. Educational authorities must foresee these needs. On the basis of the contingencies already discussed, the disposal of facilities constructed to meet emergency needs can be determined ahead of time as a part of the programming effort. Some may be maintained or turned to other uses while others may have to be scrapped.

Other long time problems of cities not immediately traceable to the war but certainly intensified by it include land use controls, the financial structure of municipalities, and administrative problems not only of coordination of functions within the city but of coordination of contiguous political units, the city and the surrounding towns and counties. The following section will deal more specifically with these problems as they relate to the physical redevelopment of cities.

The Physical Pattern of Urban America

The physical structure of the urban America to which we may look forward is limited only by the technological resources which our age of science and invention has put at our disposal. Recognizing that our cities have come into being largely as the unplanned product of virtually uncontrolled competition, and that their present form is not conducive to the greatest health, happiness, and economic well-being of those who live and work in them, it is essential that in their reconstruction we not merely minimize or eliminate those elements that stand in the way of healthful, comfortable, and satisfying living, and efficient production, but that we achieve those positive gains that are to be derived from the full utilization of the potentialities of modern technology and scientific planning.

The pattern that the cities of the future shall take should not be uniform. We may need a certain amount of concentration to obtain the benefits of favorable location at or near those focal points where access to other men, to institutions, to specialized services, to goods, to communication and transport are easiest and most economical. At the same time we will wish to have spaciousness in living, elbow-room for movement, the opportunity for privacy, free ingress and egress, access to recreation and nature for children and adult which can best be obtained in areas where the density of living is lower.

The physical structure of the city of the future should retain the benefits that come with the close living and working together of great masses of people, without incurring the adverse influences of overcrowding, congestion of traffic, and disorder which follow from the planless and random aggregation of living quarters and working places, and the improvisation and piece-meal development of service facilities and traffic lines.

The city of the future will allow for a variety of patterns, both within the cities and for different cities. These patterns will take into account not only the natural factors of site but the form that the city has already taken; its probable rate of growth or its prospects of stabilization or decline; the role of industry, transportation, service functions, and residence; the relation of the city to its hinterland, and the region of which it is the center.

The physical structure of the city should achieve a maximum of order and balance through a redesign of its parts in accordance with a careful assessment of needs to provide for the kinds of employment in industrial and commercial activities, and the location of these places of employment in accordance with their highest efficiency and greatest convenience to the workers; the determination of the quality and location of the dwellings and of the centers of educational, cultural, and religious life; the adequacy of and accessibility to recreation; and adaptation of transportation facilities to the demands of the local economy and convenience of the population.

The physical reconstruction of the city, moreover, must eradicate those features of the existing structure which have the most adverse effect upon those who live and work in them and indirectly upon the city as a whole; it must halt the further deterioration of areas and structures which are definitely on the decline; it

must undertake resolute measures for the gradual rehabilitation and conservation of those areas and structures that can and should be saved and improved; and finally, it should guide new development toward objectives consonant with the future desirable pattern of the community. Where the principal attack shall come and in what sequence the others shall follow, will depend largely upon the acuteness of the problems and the general situation obtaining in each community.

In accordance with these arrangements and designs, the rebuilding of our cities should assure provision of adequate housing for all income groups through combinations of public and private enterprise. It should assure the widest freedom of choice as to the location and type of community in which to live. It should further assure provision of structures and facilities for industries that may be necessary in order that the attainment and maintenance of full employment will not be handicapped, and that healthful, safe, and pleasant working conditions may be maintained. In most localities it will seek to reorganize transportation lines and terminals (including automobile parking facilities) and to consolidate and coordinate rail, water, air, and highway facilities into, through, and around metropolitan areas. It will provide buildings and facilities needed for enlarged or changed public services, such as education, health, library, recreation, welfare, government. It will preserve especially beautiful or interesting terrain, beaches, watercourses, or historical monuments.

It should be recognized that the objectives for the physical development of the community are interrelated with and contingent upon the economic, political, social, and cultural objectives that the community may have. A formulation of the physical objectives for the future development of the urban area which fails to take account of the future of industry, commerce, and the other sources of livelihood of the population is bound to be utopian. As we must develop a physical pattern suited to the technological necessities and possibilities of our age, so we must develop an economic, political, and social pattern commensurate with and worthy of modern resources, techniques, ideas, and aspirations. The design for the urban community of the future must take account of the rising status of our people; of the new content that the American people are learning to give to their traditional freedoms in the course of the war; of the new possibilities for peacetime production that the war effort has demonstrated; and of the new responsibilities which government, on the local, State, and national levels, has assumed for the welfare of all; and finally, of the new consciousness of citizen responsibility for the conservation of the national estate which the participation of the total population in the war effort has taught us. A clarification of these objectives by each community for itself is the prerequisite for any democratic reconstruction of urban life. In the stimulation and guidance of this self-clarification by each community and in its implementation no community should have to do without such aid as the States and the Federal Government are in a position to give.

The Tools for City Rebuilding

We can accomplish the rebuilding of urban America in our generation if we will make and use the tools that are needed. Enlarged powers and programs of action will be necessary at all levels of government.

In localities we shall need:

1. Public land administration on a metropolitan basis with public power to acquire land by all constitutional means, including condemnation, for any purpose determined to be in the public interest (in advance of specific plans) anywhere within reasonable distance of the urban area; and to use, withhold from use, lease, or mortgage land so acquired, to hold land as trustee for private or public owners, and to issue revenue bonds. Among other purposes, acquisition should be allowed for redevelopment of obsolete or deteriorated areas, for control of development alongside public improvements, for control of new development in the metropolitan area, for assembly of scattered ownerships in defunct subdivisions and otherwise, and for creation of public land reserves.

2. Public power to construct, lease, sell or manage, housing, commercial or industrial structures, transportation terminals of all kinds including automobile and aircraft parking and storage facilities; to acquire terminal rights of all forms of transportation for redevelopment, relocation, or consolidation.

3. An equitable, integrated taxation system for entire metropolitan areas; better distribution to urban areas of revenues of higher levels of government; removal of tax inequalities furnishing incentives and compulsions to undue dispersal of settlements and flight from central cities, or to develop outlying land prematurely; effective tax collection policy; protection of public interest in administration or disposal of tax abandoned land.

4. Zoning based on a realistic plan and appraisal of land use needs, with positive provisions to eliminate nonconforming uses upon amortization, and provision prohibiting residential use in industrial areas.

5. Planning on a metropolitan basis and in each governmental subdivision of the metropolitan area as a regular, functioning part of the Government. Directly related to the executive, the planning agency should assist in everyday decisions, and should furnish information and policy suggestions to the legislative. It should have broad participation of many officials, cor-

porations, citizen groups, and individuals. Planning should be in three fields: (*a*) Social and economic policy; (*b*) land and physical facilities; (*c*) capital and operating budget (including administrative). It should include: (*a*) Comprehensive, long range objectives and development plan; (*b*) interdepartmental adjustments to changing needs or conditions or for particular parts of long-range plan; (*c*) departmental planning for long-range program and specific projects.

6. A modernization and simplification of building codes, for protection of the whole community but free from unnecessary restraints and adaptable to technological development, with centralized responsibility for enforcement, including local governmental power of architectural control over building, covering location on lot, area, height, and materials, according to previous site plan for entire block or group, and including public control over length of life of structures by time building permit, renewable under certain conditions, or other means.

The participation of States will vary in accordance with their ability to assist, and the needs of cities within them. In general the following will be needed:

1. Adequate legislation to permit powers and activities needed locally, particularly to set up planning, land control, and local revenues on metropolitan area basis.

2. Intermunicipal and intergovernmental agreements and interstate compacts for establishment of functioning metropolitan agencies in areas where more than one State is involved.

3. State planning for areas outside metropolitan districts, and adequate controls of development outside the jurisdiction of metropolitan agencies.

4. State assistance to municipal, county, and metropolitan planning agencies—both financial and technical; with State administration of Federal planning aid where appropriate.

5. More equitable distribution of State revenues to urban areas.

The participation of the Federal Government in the physical rebuilding of cities will be partly through, and must be carefully integrated with, other programs of local assistance, and other Federal policies which affect city development. The particular form of the administration of this aid must be agreed upon and established soon so that advance preparation can be made for the opportunities and requirements of the coming of peace.

It can be seen now that Federal participation should include these ingredients:

1. Coordination of Federal policies and programs affecting localities in general, and specific localities; all Federal programs to recognize metropolitan needs, and encourage local metropolitan organization and action; cooperation of Federal agencies to accommodate Federal programs where necessary in important metropolitan areas and areas most violently affected by war.

2. Technical assistance or loans and grants to States and local agencies for comprehensive metropolitan planning, and for departmental planning for long-range programs, and for specific projects.

3. Establishment of Federal training of technicians for planning in cooperation with universities and professional societies or organizations of public officials; this to include both active participation and financial assistance on the part of the Federal Government.

4. Coordination and synchronization of Federal revenue programs with those of States and localities; further development of system of grants in aid for minimum services, and distribution of revenues, Federally collected.

5. Integration of the functions of the existing Federal housing lending and construction agencies.

6. Establishment of a National Transportation Agency for development of general and progressive plans, under appropriate legislative directives, with leadership in programs of transport consolidation, terminal unification, and reconstruction;[2] legislative authority for transportation agency to assist localities as well as States.

7. Authority to dispose of federally owned land by lease, sale, trade, or gift to any public body at any level of government, for a purpose in the public interest, as approved by proper planning bodies, without public auction; Federal power to condemn and take land or otherwise to acquire it, at the request of State or local governments, and to reconvey it to State and local governmental bodies as above; to make loans or grants to State and local governments or public bodies for land purchase.

8. Legislative authority for assistance to municipalities, counties, or metropolitan authorities directly, or through State agencies, in development of public-service programs and facilities, by means of technical assistance, loans, or grants.

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[2] Cf. *Transportation and National Policy*, National Resources Planning Board, 1942.

IV. RURAL LAND IMPROVEMENTS[1]

I. Conservation and Improvement of Agricultural Lands

When the war ends, there will be an especially great need for public and private improvements to conserve and improve agricultural lands. These types of improvement are being curtailed drastically through shortages of men and materials, and the longer the war lasts, the greater will be the cumulative deficiency, particularly in conservation activity. The need for conservation will have been further augmented by the strain on the soil imposed by increased acreages of row crops, such as corn, soybeans, and peanuts, which the war production program requires.

The magnitude of a post-war program of improvements on agricultural land must be governed by the size of the agricultural plant needed in the future to provide the Nation with adequate supplies of food and fiber and to satisfy export demands for these products. Predictions as to the acreage of crop and pasture land needed for these purposes within the next two decades can be made only within broad limits. That acreage depends on the rate of population growth, on foreign demand, and on the effectiveness with which the agricultural plant is used.

Predictions of population in the United States in 1960 range from 137,000,000 to 154,000,000 depending on what hypothesis is used with reference to birth rates, death rates, and immigration. Using medium estimates of birth and death rates and estimates of net immigration ranging from nothing to 100,000 annually, it would appear that the population in 1960 might reach 147,000,000 to 149,000,000, or 14,000,000 to 16,000,000 more than at present. To provide food at present diet levels for such an additional population would require 35,000,000 to 40,000,000 more than the 311,000,000 acres we had been devoting to domestic food production during the immediate pre-war years, assuming production per acre equal to the average for the years 1936–40.

Present diets of a large proportion of the population are inadequate to provide proper nutrition, but the additional foods needed are largely those, such as green vegetables, whose production per acre is relatively high. These foods would take the place of some of the cereals now consumed, whose production per acre is relatively low. In fact, the Bureau of Home Economics' standard of an "adequate diet at modern cost," could be supplied to our entire population from practically the same crop area per capita—about 2.39 acres—as we were devoting to this purpose during the immediate pre-war period. It does not appear necessary, therefore, to make additions to our crop acreage beyond those needed to provide for population increases, or increases in exports of foods, except perhaps to provide for excess consumption among high-income groups.[2]

The outlook for exports of agricultural products 20 years hence is highly uncertain. Immediate post-war exports of food and feed are expected to be heavy, as they were immediately following World War I, but probably they will decline with the recovery of agricultural production in European countries. During the period 1936–40, American agricultural exports absorbed the production from about 26,000,000 acres. They are not likely to fall greatly below this level for any considerable period. Improvement in world economic conditions which would permit a substantial increase in food consumption in countries where diets are sadly deficient would provide an enormously increased demand for food, but the extent to which the United States would be able to compete with other exporting countries in supplying such a demand is a matter for conjecture.

Assuming a population of 149,000,000 in 1960, the achievement of a moderate cost but adequate diet for this population, and the maintenance of agricultural exports at about the 1936–40 level, it appears that an additional production equivalent to the present rate of production on about 40,000,000 crop acres will be needed by 1960.

In addition, some source of production must be found for the acreage which is now devoted to crops but which cannot remain permanently in that use because of destructive erosion and eventually must be retired to grass or forest. The Soil Conservation Service has estimated that there are 76,000,000 acres of such cropland. Its rate of retirement will be slow, but as much as 40,000,000 acres may be retired by 1960.

The question which naturally follows is "What are the sources of the necessary additional agricultural production?" Part of it probably will come from increased production per acre resulting from continuation of the replacement of workstock by tractors and trucks on farms, from improved technology, and from shifts in crop acreage to more productive land. Increased production equivalent to present production on 25,000,000 acres might come from these sources by 1960. Another

[1] Prepared under the direction of Assistant Director Ralph J. Watkins, by John Bennett, Chief, Land Section, of the Board's staff, from information furnished by the Departments of the Interior and Agriculture.

[2] An addition of 5 percent to the per capita food-crop acreage for this purpose has been included in some calculations. In 1960, such a reserve acreage would amount to about 17,000,000 acres.

fairly easily available source of additional crop production is the idle cropland and the plowable pasture in farms. The Census of Agriculture listed 57,000,000 acres of idle or fallow cropland in 1939. In 1938, the Soil Conservation Service estimated that there were 53,000,000 acres of plowable pasture in farms, 22,000,000 of which could be cultivated without special practices to prevent serious erosion. There also were in farms 42,000,000 acres of land which might be used for crops after clearing, 8,000,000 acres of potential cropland in need of drainage and 6,000,000 acres in need of irrigation. Outside of farms there appear to be about 16,000,000 acres of irrigable land, 41,000,000 acres of land which could be used for crops after drainage, and approximately 170,000,000 acres of cut-over land physically capable of producing crops after clearing, without irrigation or drainage.

There appear, then, to be ample sources of additional crop production to meet our domestic needs for food and fiber and at least to maintain our agricultural exports. A substantial public program of soil conservation will be needed, however, to preserve the productivity of the present crop areas that are physically and economically suited to continued cultivation. To the extent that farmers themselves are not able to bring the needed additions to crop acres into production by cultivating idle cropland or plowable pasture or by clearing forest land, public programs of reclamation through irrigation and drainage works and perhaps some land clearing, will be necessary.

Soil Conservation

During the past 300 years the soil has been destroyed or severely impoverished by erosion on 282,000,000 acres of land in the United States and has been damaged to some degree on 775,000,000 more acres. Damage has been especially severe during the last 50 years, and promises to grow progressively worse unless adequate measures are taken to arrest it. According to Soil Conservation Service estimates, there are 178,000,000 acres of the present crop acreage that can be continued in cultivation only through special cultural practices which require inputs of labor and materials outside the normal farm operating outlays. Such practices on the more erodible croplands and on the intensively used pasture lands in farms include construction of contour furrows, terraces, field diversions, and drainageways for water conservation and disposal; stock-water development and fencing to effect better distribution of stock on pasture land and thus reduce overgrazing; planting of eroding slopes; construction of gully-control works and improvement of streambanks to control bank cutting.

To achieve full control of soil erosion on the Nation's farms would require, it is estimated, about 3,500,000 man years of labor and, at 1940 wage and material-price levels, would cost more than $4,500,000,000. Special upstream flood control structures on rural lands would add 400,000 man years of labor and about $500,000,000 to the cost.[3] While soil losses are being mitigated appreciably by farmers' own efforts, much of the soil conservation work is of such a nature that it cannot be carried out by individual farmers. It requires Government participation and is suitable for Government improvement projects. The costs may be divided between Government and the individual farmers on the basis of benefits derived.

Irrigation

More than 20 million acres of cropland in the United States are irrigated. The irrigated lands lie largely in the 17 western States, in areas where rainfall is insufficient to produce crops. They are the mainstay of the agricultural and range industries of the West, and supply the Nation with a considerable proportion of its fruits and out-of-season vegetables.

The possibilities of constructing simple irrigation works by individuals were quickly exploited in the development of the West, and irrigation soon became a cooperative, corporative, or public enterprise. During the past 30 or 40 years, most of the irrigation projects have been developed by public agencies, and largely by the Federal Government. The Federal Bureau of Reclamation and the Office of Indian Affairs have constructed facilities to provide a full supply of water to more than 3,000,000 acres of land and a supplemental supply to almost 2,000,000 acres. Usually the Federal agencies construct storage dams, diversion dams, and distribution canals to bring water to the farm boundaries. Construction of ditches to distribute water over the land, land clearing and leveling, and construction of farm buildings commonly are carried on by individual farmers.

The Bureau of Reclamation estimates that unused water in the 17 western States can be conserved to give a full supply to all lands now irrigated and to reclaim 22,000,000 additional acres. The Bureau's investigations also indicate that the almost 12,000,000 acres of the lands now under irrigation will require supplemental water. The cost of works allocable to irrigation on this entire acreage would exceed $3,000,000,000. Probably considerably less than the entire acreage can be developed economically; however, a substantial acreage will be provided with irrigation works. Projects already under construction or authorized will bring in 3,000,000 addi-

[3] This cost estimate and others in this section are those submitted by agencies in the Departments of Agriculture and the Interior. They largely represent costs of programs carried to the physical optimum. Determination of an economic optimum will require further study.

tional acres and provide supplementary water to 5,000,000 acres now irrigated.

Drainage

About one-fourth of the cultivated land in the United States has been made arable, or has had its productivity increased, through drainage. Most drainage enterprises, like irrigation, have required cooperative action, and laws authorizing the organization of drainage districts as legal subdivisions of the States have been in effect in practically every State for many years. The earlier drainage enterprises were located largely in the Upper Mississippi Valley and were, on the whole, successful. Beginning about 1915, however, drainage of large cut-over swamp areas in northern Minnesota and in the alluvial areas of the Lower Mississippi Valley was undertaken as a speculative activity. Many drainage districts in these areas have encountered serious financial difficulties since 1920. In some, the land has proved to be unproductive after drainage; in others, the land is fertile, but the drainage layouts are poor, especially in relation to the drainage layouts in adjacent districts, so that adequate drainage either has never been secured or has been secured only at excessive costs. Many such districts have been unable to maintain their works, and a large volume of repair work is necessary to rehabilitate the drainage facilities.

There still is an extensive acreage of land that could be made suitable for cultivation through drainage at moderate costs. According to estimates prepared in the Department of Agriculture, there are within existing drainage districts about 25,000,000 acres already under cultivation whose productivity could be increased through additional drainage, and 4,000,000 acres of undeveloped land that could be brought into cultivation through improvement in drainage works. Outside of existing drainage enterprises, there are about 6,000,000 acres of partially developed cropland and 14,000,000 acres of undeveloped land that could be brought to full productivity through drainage. To rehabilitate the drainage works in existing drainage enterprises would cost from $5 to $30 per acre drained, with an average of $9 or $10. To drain the land suitable for crops outside of existing drainage enterprises would cost from $10 to $40 per acre, excluding costs of clearing and other improvements. Should this entire program for rehabilitating existing drainage enterprises and for draining about 20,000,000 acres in new enterprises be carried out, the cost probably would exceed $1,000,000,000.

Clearing

Most of the croplands in the eastern third of the country originally were in forest and had to be cleared prior to their cultivation. As noted earlier, there still are about 42,000,000 acres of woodland and brushland in farms, and 170,000,000 acres of land outside of farms, which might be physically suitable for crops after clearing. Probably it would be economical to clear only a small portion of this acreage.

Land clearing has been undertaken as a public project only in isolated instances, as the costs are likely to be more than the settler can repay. Usually the settler can purchase the uncleared land and use his own off-season labor to clear it at considerably lower cost. Rehabilitation of certain distressed agricultural areas where land clearing by settlers themselves proceeds too slowly to enable them to secure an adequate living, however, may justify some land clearing by public agencies as a measure of public subsidy, where the land would be productive after clearing. The costs would range from $10 to $50 per acre.

Choosing Methods of Adding to the Crop Area

Since there are greater areas available for additional cropland than will be needed during the next two decades, the additions to the present crop acreage from the various classes of available land will be less than the total acreage in each class. It is likely that the greatest addition will be made from the idle cropland and plowable pasture in farms, even though much of this land is of poor quality. This land can be prepared for crops in the least time and at the least cost. Its transfer to cropland is being hastened by the extra burdens placed on our crop area by the war. In 1941, the area of harvested crops was 352,000,000 acres. Production goals for 1942 call for 364,000,000 acres, and the goals for 1943 and 1944 undoubtedly will be progressively higher. Practically all of this additional acreage must come from plowable pasture or from idle cropland; irrigation, drainage, or clearing cannot provide it at the needed speed. Once cultivated, this land will tend to stay in cultivation, even though much of it may not be as productive as other land which might be reclaimed, particularly through irrigation or drainage.

It is difficult to predict the relative acreages which might be added to the crop area through clearing, drainage, or irrigation. Each method has its advantages and disadvantages. Farmers with little or no outside assistance can add to their cropland through clearing, frequently at relatively low costs, but the rate of addition is slow, and the land is likely to be of comparatively low productivity. Drainage usually is cheaper than irrigation as a means of reclaiming land, and most of the drainable land is nearer to large markets than the irrigable land. The productivity of drained land sometimes is disappointingly low, however; and drainage enterprises still have many difficulties of organiza-

tion and financing to overcome. Irrigation, in general, brings land into cultivation at the highest cost; furthermore, much of the irrigable land is far from market and is suitable chiefly for specialty crops that are produced and marketed with high risks of loss. Productivity of irrigated land varies widely. In contrast with drainage enterprises, however, all of the large irrigation projects are constructed by strong Federal agencies, with long experience in designing, building, and operating irrigation works.

II. Range Conservation and Improvement

Wartime demands on the western range lands, like those on the crop and intensively used pasture lands, will enhance the need for conservation activities after the war. Improvement work on the range lands is being curtailed on account of shortage of labor and materials. At the same time, increased demands for meat have added greatly to the number of stock on the ranges. While the weather so far during the war has been relatively favorable to forage growth, any protracted drought such as was frequently encountered during the thirties would result in extensive overgrazing.

There will be little opportunity to add appreciably to the acreage of range land, particularly in the western states, as most of the range is already used by livestock. Demands on the range, however, will continue to grow with increasing population. It is important, therefore, that the grazing capacity of the range lands not only be maintained, but increased. This will require both careful grazing management and a comprehensive program of physical improvements to the land.

Almost two-fifths of the 970,000,000 acres of range land in the United States are publicly owned. Effective use of much of the privately owned range and cropland in the West is dependent upon the adjacent and intermingled public range land. Conservation and improvement of range lands, therefore, are major public responsibilities.

Soil and Moisture Conservation

The most vital need of the range lands is for soil and moisture conservation works, not only for the preservation of the forage on the range itself, but for control of floods and sedimentation on more valuable valley lands which lie below it. Protection or restoration of vegetative cover will be sufficient to prevent erosion and excessive run-off on some of the range lands, but in many places mechanical or structural treatment is necessary. Structural measures include fences and stock-water developments, which prevent local overgrazing by effecting more even distribution of stock on the range; terraces, contour furrows, dikes, diversion dams, spreaders, and other water-retarding structures; and bank-protection structures, such as levees, revetments, and stream-bottom fencing.

Artificial Reseeding

Artificial reseeding is another vital need in large areas of the range on which the natural forage has been removed through erosion or overgrazing to such a degree that it cannot be restored through natural means. While artificial revegetation is likely to prove a difficult matter on those western range lands where rainfall is low and wind velocity and summer temperatures are high, certain drought-resistant grasses have been grown successfully in the more favorable locations. Artificial reseeding may be possible on as much as 80,000,000 acres of the range lands. Particularly suitable for this type of improvement are the 20,000,000 acres of abandoned cultivated fields in the Great Plains.

Noxious Plant and Rodent Control

Related to artificial revegetation is control of noxious plants on the range. The invasion of forage producing lands by nonpalatable or poisonous vegetation and by woody plants with low food value is an increasingly serious problem. It results often from overuse of the forage.

Control measures vary widely. Burning, dragging, and grubbing are common methods. Seldom is it practicable to attempt complete eradication, except in critical areas; the object of control is to reduce the stands of the weed plants and give the more palatable and nutritious plants an opportunity to replace them.

Rodents destroy huge amounts of forage on the range lands. Prairie dogs, rabbits, ground squirrels, kangaroo rats, and pocket gophers are the principal range-destroying and forage-consuming rodents. Organized projects for rodent control apparently are needed on 185,000,000 acres of range land.

Fire Control

Measures to facilitate fire control are necessary to reduce losses in many range areas where close-growing grass or brush stands create a fire hazard. Presuppression measures consist largely of those, such as firebreaks, which are placed along railroads and highways to reduce the hazard, and those which facilitate speed of attack against fires after they start. The latter consist of lookout towers or other observation points to permit prompt detection of fires, communication systems for reporting fires, and roads and trails to provide for the movement of men and materials for suppression.

Improvements for Optimum Use of the Range

Every ranch manager needs certain facilities for the profitable management of his livestock enterprise.

Many of the activities which are important in arresting soil damage and protecting the range from fire also are necessary to proper range management. Fences and stock-water developments, for example, which help to prevent overgrazing, are also essential in profitable range operations. Roads and trails which facilitate fire control likewise permit easy movement of stock and materials in the everyday operation of the ranch.

Livestock need drinking water in sufficient quantity and of good quality within easy walking distance. In the arid and semiarid regions of the West, provision of adequate water supplies is one of the major problems. Stock-water may be developed by improving and protecting springs, by drilling wells, or by placing earthen dams across small intermittent streams to impound in small reservoirs the water that flows after heavy rains. Estimates prepared in range management agencies in the Departments of Agriculture and Interior indicate that about 32,000 additional springs, 13,000 wells, and 59,000 reservoirs are needed on the Nation's range lands to provide for their most effective use. About 375,000 miles of fencing and 35,000 miles of driveways and trails also appear to be needed.

Costs of Range Improvements

To carry out the conservation and development program on the range to the extent outlined above would cost, at 1940 wage and price levels, in excess of $1,000,000,000. It would require about 1,000,000 man-years of labor. The program could be spread over several years.

III. Forest Conservation and Improvement

Forest lands, as well as crop and range lands, are subject to heavy drain during wartime. The total drain on the Nation's timber, already in excess of growth, has increased 25 percent since the beginning of the war. The need for speed in securing timber supplies has increased destructive types of cutting and is leaving unusually large areas of denuded forest lands. At the same time, conservation and improvement operations in the forests are suffering from lack of men and materials. A large backlog of needed forest improvements therefore will have accumulated at the end of the war.

A post-war program of improvements on forest land should be geared so far as possible to the probable future needs for wood. The long-production cycle of the forest enterprise requires planning now for wood production several decades ahead. The demand for wood so far in the future is especially difficult to predict. It will depend on the availability and cost of timber as compared with other structural materials, on the rate of population growth, on the rate of economic activity, and the purchasing power of the people of the Nation, and on the course of foreign demand for American timber.

A number of factors point to increasing use of wood. Population is expected to increase, at least for another 20 years. Plans for large post-war housing projects, if carried out, would use increased quantities of wood. The structural materials which compete with wood are derived chiefly from irreplaceable resources, such as iron ore, while wood is renewable, and as time goes on, the competitive position of wood should improve. Recent improvements in plywood have greatly widened the usefulness of that material. Experiments in new uses of plastics, for example in automobile bodies, point to greatly increased use of these materials. Probably the cheapest source of raw material for plastics is wood.

On the basis of these favorable factors in the timber-consumption situation, the Forest Service has set as a tentative goal, to be achieved within 75 years, a forest plant that would produce about 21,000,000,000 cubic feet per year. This is almost twice the current annual timber growth; it is about 60 percent greater than the pre-war drain on the supply. The scope of the forest conservation and development activities outlined below is based on the attainment of an annual productive capacity of 21,000,000,000 cubic feet. The activities include forest-fire control, construction of forest transportation facilities, development of timber resources, planting of shelterbelts, and construction of watershed-protection devices.

Forest-Fire Control

Protection against fire is indispensable to the conservation and development of forest resources. All other improvements are in vain if fire destroys the forest. With minor exceptions, fires may occur on all forest lands. The average area burned over annually in recent years has been 32,000,000 acres, most of which has been on lands not under organized protection.

Three-fourths of the total public and private forest area needing protection from fire is given some protection, but it is by no means adequate. Protection consists of both suppression and presuppression activities. The losses from fire and the costs of suppression are greatly reduced by certain works for reducing hazards and facilitating speed of attack. As on the range lands, these works consist of lookout towers, telephone lines, truck trails, and firebreaks.

Forest Transportation Facilities

Highways, roads, and trails are essential to the management of forest lands. In addition to facilitating fire protection, they provide transportation routes for highway travel through the forests, and make the

forests accessible for improvement, recreation, and logging.

Highways through the forests may be part of Federal aid, State, county, or other systems. In general, they are all-year routes designed to carry both heavy freight and high-speed passenger traffic between cities and towns. Forest development roads, usually unsurfaced and of single-lane width with turn-outs, are the mainstay for forest administration. Forest trails are designed for horse and foot travel, and are useful for administrative travel, protection, range and wildlife management, and recreation.

There are at present 35,000 miles of highways serving public forest lands, and 148,000 miles of highways serving privately owned forest land. In public forests there are 117,000 miles of development roads and 156,000 miles of horse and foot trails, and in privately owned forests, 400,000 miles of development roads and 157,000 miles of horse and foot trails. Completion of the forest transportation system would require, it is estimated, 8,500 miles of highways, 43,500 miles of development roads, and 52,000 miles of horse and foot trails in public forests; and 3,600 miles of highways, 61,000 miles of development roads, and 107,000 miles of trails in privately owned forests.

Timber Resource Development

In the development of forest land resources, fire protection, and transportation systems are highly necessary but only preliminary measures. The exploitative damage to the forests must be repaired; denuded areas must be restored to tree growth; natural regrowth on cut-over lands must be so managed as to avoid understocked or overstocked stands and to reduce the dominance of unprofitable species; forests must be utilized so as to attain a balance between optimum current yields and favorable conditions for regrowth; attacks of disease and insects must be held to a tolerable minimum.

To attain these ends, programs of forest planting, forest-stand improvement, and protection from insects and disease have been instituted.

Forest planting is resorted to only on those areas where natural regeneration is not proceeding satisfactorily. Sometimes tree seed is planted directly on the lands where the trees are to be grown, but the more common practice is to grow seedlings in nurseries for transplanting. A forest planting program covering 32,000,000 acres within a 25-year period, is proposed. Most of the planting would be done in eastern and middle-western States.

Forest-stand improvement consists of the cultural work necessary to better the composition, quality, and growth rate of a forest stand, from the sapling to the saw-timber stage. It includes thinning, pruning, removal of weed trees, and salvage cutting. The work is done largely with simple hand tools. A 25-year program for stand improvement on 65,000,000 acres of forest land is contemplated.

Currently, the most serious tree disease that is being held in check by organized control is white pine blister rust. About 29,000,000 acres require protection from this disease, and the value of the standing timber subject to it is $350,000,000. Control is achieved by destroying all wild and cultivated currant and gooseberry bushes, the intermediate hosts of the disease, that are within infecting distance of the white pine trees. Initial eradication plus reworking will amount to the equivalent of working 42,000,000 acres once.

The Shelterbelt Project

The shelterbelt project is located in an expanse of the prairie plains which extends from eastern North Dakota southward and westward for 1,000 miles into the Texas Panhandle. This is an area where natural tree growth is scarce but where planting will succeed if carefully done in the proper places. The purpose of the shelterbelts is to protect fields against drying and drifting of the soil. The main belts are 60 to 110 feet wide and comprise 5 to 10 rows of trees and shrubs so grouped as to form an effective windbreak. Shelterbelts will not modify the general climate of the Great Plains, but they will modify the local climates by deflecting wind, casting shade, catching snow, and conserving soil moisture. In general, their effects extend to leeward a distance about 20 times the height of the tallest trees.

Begun during the disastrous droughts and windstorms of the middle thirties, the shelterbelt program has now covered more than 13,000 linear miles and has extended to 22,000 farms. A 25-year program of additional shelterbelt planting is proposed, covering 100,000 linear miles and one million acres. Such a program would involve 160,000 farms.

Watershed Improvements

Watershed management is an important phase of forest-land management. Its major objective is to realize the maximum amount of water from a watershed that can be delivered for continuous, well-planned use on the basis of soundly established priorities, without unnecessary waste or damage to other resources. Forests are a major influence in watershed protection on 316,000,000 acres, or about half of the forest area of the country, and of moderate influence on another 144,000,000 acres. In certain areas, notably southern California and along the Wasatch Front in Utah, watershed-

protection values of the forests are greater than all others.

Water-flow control is achieved principally by controlling the density of the vegetative mantle, and preserving an adequate ground litter of leaves, branches, and other vegetable matter for absorbing excess moisture which might otherwise flow quickly into watercourses, causing destructive soil erosion and floods. Minor engineering work may be employed to supplement vegetation in the permanent stabilization and control of watershed conditions.

While satisfactory management of the forests for timber production, including such measures as fire protection and replanting, goes far toward meeting the requirements of watershed management, some special treatment is required where vegetation is of types having no value as timber, or where forest areas are so damaged by erosion that special improvement work is necessary to establish a stable soil base on which to start forest vegetation. Revegetation and structural devices, similar to those described under the range-improvement program, may be used separately or together in carrying out watershed-improvement projects.

Administration Buildings in Public Forests

Many kinds of buildings and other improvements are needed in the management of large forest properties. Since many of the Federal forest properties especially are mostly remote from towns where such facilities could be rented, the Federal Government frequently must build the required offices and living quarters and related facilities. On the Federal lands the administrative improvement program is about 40 percent complete.

Cost of Forest Conservation and Improvement Program

A program of forest conservation and improvement, if carried out to the extent indicated in the preceding pages, would require more than 1,700,000 man-years of labor and would cost, at 1940 price and wage levels, about $3,700,000,000. The program could be spread over a period of 25 or more years.

IV. Improvement of Recreational Land

Needs for recreational facilities in rural areas are described in detail in "The Park and Recreational Problem in the United States," issued recently by the National Park Service. In brief outline, the indicated needs are as follows:

1. Holiday and week-end recreational areas for residents of urban and densely populated rural areas, located within 25 miles of those for whom they are chiefly provided, and similar areas, probably more widely spaced, for residents of more sparsely populated rural areas.

2. Extensive public holdings in all those parts of the country characterized by forests, rugged terrain, lakes and streams, for vacation use by both urban and rural residents, and located wherever possible within 200 miles of the urban centers to be served.

3. Public holdings of an adequate portion of the shores of oceans, lakes, and major streams to provide recreational opportunities for those who live within reach of them.

4. Public ownership and administration of all areas of outstanding natural scenery, or outstanding historic, prehistoric, or scientific significance, for the recreational use of all of the people.

5. Special recreational areas, such as parkways, trailways, routes of recreational water travel, and wayside resting places along the major highways.

These needs already are partially supplied by National, State, county, and municipal parks and park ways, and by the recreational areas of the national forests, wildlife refuges, and other reservations. Altogether, almost 26,000,000 acres are used primarily for recreation and many millions of acres are available for recreation as a secondary use. The principal need is not primarily for more recreational land in the aggregate but for additional recreational lands and recreational facilities in locations easily accessible to the people. To provide adequately for recreational needs on rural lands, recreational agencies suggest the following program of acquisition and development:

1. Local nonurban parks and recreational areas, 150,000 additional acres.
2. State parks and related recreational areas, 4,000,000 additional acres.
3. National parks and park projects, 3,075,000 additional acres.
4. National forests, 1,500,000 additional acres.
5. Short frontage, 1,500 additional miles.
6. Parkways, 10,000 additional miles.

Recreational improvements cover a wide range of playgrounds and play fields, shelters, bathhouses, cabins, lodges, administration buildings, museums, highways, roads and trails, fire protection facilities, and sanitary facilities. To acquire the recreational land acreages noted above and to develop them properly would cost, it is estimated, in the neighborhood of $4,500,000,000. Such an acquisition and development program naturally would require many years for its completion.

V. Improvements for Conservation and Development of Fish and Wildlife

Preservation of our fish and wildlife resources and their development on a scale adequate to meet the Nation's needs will require continuation of a substantial

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program of improvements to the land and water bodies which form fish and wildlife habitat.

A major part of such a program is the construction and improvement of lakes, ponds, reservoirs, and watering places. This work includes construction of dams, and other water-control structures, fencing of pond or lake environs, and planting of vegetation, for production of waterfowl, food fishes, fur-bearing animals, big game, and upland game. Wildlife refuge development likewise requires extensive improvements to provide watering facilities, supplementary food patches and shelters; to restore nesting areas by providing desirable food plants; to furnish protection against misuse by fencing and posting; to provide fire protection by construction of fire towers, roads, and communication lines; and to provide buildings and other facilities for administration. In the refuge program, extensive marsh areas are needed in the South for waterfowl wintering grounds, and smaller feeding refuges should be established along the four principal waterfowl migration routes—the Atlantic, Mississippi, Central, and Pacific. Larger areas are needed in the northern nesting zones. Altogether, wildlife refuges covering 7,500,000 acres appear to be needed. About 4,000,000 acres already have been acquired.

Extensive improvements to streams and stream banks are necessary to proper preservation of habitat for fish and waterfowl and some fur bearers. Fencing of some banks to prevent overuse and consequent erosion, and planting of banks to arrest erosion and improve environmental conditions are needed. In certain areas additional work is possible, such as construction of pools and of log and rock deflectors for fish production; planting of willows to encourage beaver placement; and planting of broad leafed trees to provide shade and maintain lower temperatures over trout streams.

Pollution of streams by sewage and industrial wastes is highly destructive to fish and wildlife. Construction of plants for sewage treatment and of devices for controlling industrial pollution, and sealing of abandoned mines against pollution of streams by waste acids, are valuable in preserving wildlife, as well as reducing the danger to human health. Restoration of stream bottoms by removal of accumulations of sawdust, pulp, and other waste materials that prevent the growth of food organisms, is highly important in fish production in certain streams.

VI. Summary

A program of conservation and improvement of agricultural, range, forest, recreational, and wildlife lands as outlined in the preceding pages, should form a substantial part of a post-war program of public and private construction. If carried out to the maximum extent indicated as physically feasible by agencies in the Departments of Agriculture and the Interior, such a rural land conservation and improvement program would require, over a period of from 20 to 25 years, about 20,000,000 man-years of labor, and cost perhaps as much as $25,000,000,000. The program probably will not be economically justified on this scale during the next two decades; however, much of the work is of such a nature that it can be expanded or contracted quickly and conducted on a large or small scale, to conform to the needs for public works to maintain employment. The program should be carried on at a rate which will keep it in balance with private activities and with other public works programs. At the minimum, expenditures for land conservation should be kept at a level sufficient to prevent unreasonable wastages of natural resources. Costs should be divided among the various levels of government and among individuals according to the distribution of benefits derived from the work.

V. VALLEY DEVELOPMENT[1]

Sound planning for the control and development of water resources has always been of importance to the Nation at large. Recent years have witnessed a growing recognition of and interest in the national values created, as has been made evident by the expenditure of public Federal funds for the purpose. Thus, the large Federal contributions to the development of the Central Valley of California primarily for irrigation and power, and to New York City for extension of its water-supply facilities, represent a coverage in the field of water resources no less broad than the geographic limits involved.

The task before the Nation is to schedule its plans and develop its resources so that the optimum benefits will result.

It would be wrong to over-simplify the magnitude of the problem of devising means of providing the best use and control of the Nation's water resources. It would be equally wrong to imply that the situation is so complex that it is beyond solution.

The highly industrialized and densely populated regions in the Northeastern States present problems quite unlike those of any other part of the country. Dominant among existing conditions which must be rectified in order to permit full economic and social development, are the control of floods and the protection of health and stimulation of industry by abatement of pollution and production of adequate water supplies. This area is primarily concerned with remedying conditions which have already matured. During the remedial processes other purposes can also be achieved, such as the development of hydroelectric power and the improvement of water transportation.

Compare those conditions, for example, with conditions in the Great Plains or the Pacific coast regions. Full economic growth of those areas will come primarily from the proper original development of their water resources. While remedies of existing conditions are important to these regions, they are less important than development of new or supplemental facilities.

In the Eastern States, crops flourish with normal rainfall; in the Great Plains, from the Canadian to the Mexican border, the success of crop production is unpredictable unless rainfall is supplemented by irrigation; west of the Continental Divide, with few exceptions, intense agricultural production is impossible without irrigation. This far western area, furthermore, is one of enormous contrasts, containing a number of subregions which differ widely in their natural resources and opportunities for development.

[1] Prepared under the direction of Assistant Director Frank W. Herring by the staff of the Water Resources Section.

Opportunities for Water Development

Although billions of dollars have been spent in the past by Federal, State, and local agencies on the construction of water projects, the nation as a whole is only on the threshold of making the best use of its water resources. The Federal Government has for many years taken the lead in navigation and irrigation projects, but much remains to be accomplished in these fields. It is only within recent years that the Federal Government has participated extensively in water power development, flood control and soil conservation and run-off retardation projects. Pollution control, water supply, and land drainage have been considered primarily the responsibility of State and local groups, but irrespective of where responsibility lies there is still much to be done.

Some indication of the character of the job which still lies before us can be gained by considering various activities in the field of water use and control, by way of illustration. Projects or programs that may be proposed to meet the situations presented must, of course, meet proper standards of quality before they can be considered right for undertaking.

Adequate protection of our agricultural lands and urban communities against the hazard of periodic floods is a national task which is far from completed. Since 1936 a great number of investigations have been initiated and completed, and many projects have been built, but there are still a great many areas in which the need for flood control has not yet been fully explored. It is evident from available information that further construction entailing expenditure of several billions of dollars may be desirable and justified.

It has been estimated that if run-off now uncontrolled in the 17 western States were to be conserved, it would be enough to supplement the water supplies for 12,000,000 acres of land now inadequately irrigated, and to bring under irrigation 22,000,000 acres of new land. The construction involved, if all this were to be done, would cost more than $3,000,000,000. While only a portion of this task may be feasible for undertaking during our lifetime, the horizon of possible development is indicated.

In 1940, the total installed capacity of the nation's hydro-electric power plants was 11,550,000 kilowatts (the energy output in that year was about 50,000,000,000 kilowatt-hours). Assuming the same load factor, and that markets will arise to absorb the power, installations totalling 70,000,000 kilowatts may become feasible. Soil conservation and run-off retardation measures are needed in varying degrees on several hundred million acres. If it were decided to provide full control of soil erosion on the nation's lands, expenditure of several billions of dollars would be required.

The development of navigable streams and of coastal and lake harbors is the oldest phase of public improvement related to water use, and is, naturally, further advanced than any other. Nevertheless, expansion, as well as improvements, due to increasing use, will be required in all quarters of the country.

Adequate measures for the control of pollution have long been neglected in thousands of localities. The expenditure of at least two billion dollars would be required to obtain desirable standards of stream purity.

Expansion and improvement of public water supply systems and sources of supply is an urgent requirement in many localities in nearly every region of the United States.

About one-fourth of all our cultivated lands have been improved to some extent through drainage undertakings, many of which are now badly in need of repair and rehabilitation. A suitable rehabilitation program and a program of drainage of new lands suitable for cultivation would involve more than one billion dollars.

Other types of action related directly to the control or use of water, such as silt control, malarial control, and prevention of bank and beach erosion will entail considerable cost, but that cost can be materially reduced if the nation's water resources are wisely controlled and utilized throughout.

Estimates of the total investment necessary fully to develop and control the water resources of the nation have ranged up to 50 billion dollars. Precision is impossible, but an estimate of half that amount could easily be defended.

Of special interest are several outstanding proposals for water resource control and development.

St. Lawrence Waterway [2]

Improvement of the St. Lawrence for navigation has attracted active interest both in the United States and in Canada for many years. Both Governments have spent large sums for the improvements which now provide 14-foot navigation from the Great Lakes to the sea, and provide for 25-foot navigation for great part of the distance. The plan now proposed calls for a waterway giving 27-foot depth from the Atlantic Ocean to all major Great Lakes ports, which would make the Lake ports accessible to ocean-going vessels. This improvement would apply primarily to the short International Rapids section upstream from Montreal, but would include less extensive improvements and enlargements throughout the course of the present waterway. An integral and perhaps equally important part of the project would be the development of waterpower at the International Rapids section. Present plans call for an installed capacity of 2,200,000 horsepower, estimated to produce 13 billion kilowatt-hours of electrical energy annually, almost one-third of the total amount of hydro-electric energy generated in the United States in 1941. As now conceived, the entire project is estimated to cost about a quarter of a billion dollars. Representatives of the Canadian and United States Governments have agreed upon a treaty under which the project could be built; the treaty is now before the Congress for consideration.

Any project of this magnitude and regional extent must cause changes in the social and economic conditions within the area of its influence. As plans are perfected to produce the maximum national benefits, the project will open the way to significant regional development.

Arkansas Valley Region [3]

The region, comprising the watersheds of the Arkansas, Red, and White Rivers, has recently been studied intensively to bring together and relate many existing functional water-development plans and to produce a plan for the comprehensive development of its resources. The information gathered from States and local agencies, constituted an excellent background for the formulation of a program of construction for full development of the region's water resources. In the resulting program, 140 projects per flood control, power development, and irrigation were considered desirable and likely to be essential to the ultimate best use of water in the region. In addition, the attainment of desirable standards of sanitary quality in the streams was found to call for more than 260 projects for improved treatment of municipal sewage. At many localities, improvements of water-supply systems are greatly needed. An extensive program for rehabilitating land-drainage districts is desirable. Future needs of water transportation may show that the canalization of several major streams is economically desirable. Soil erosion is severe throughout the region, and it is esti-

[2] Cf. *St. Lawrence Survey*, U. S. Dept. of Commerce, 1941.

[3] Cf. *Regional Planning*–Part XI–"Arkansas Valley", National Resources Planning Board, 1943.

mated that more than one million man-years of labor would be required to accomplish conservation and run-off retardation measures.

The cost of the entire program would exceed two billion dollars and still would not represent the amount required for full development. For instance, the water power program contemplates less than 50 percent of the potentially justified projects. This planning project shows how vast the needs for development are, when all studies and proposals of Federal, State, and local agencies are assembled and coordinated into a comprehensive plan.

The direct relation of water conservation and control to the desirable future economy of the various portions of the Arkansas Valley region is important. In the Western half of the region, the cattle-raising industry dominates the economy. It has periodically suffered severe set-backs from lack of cattle feed during long droughts. Water now wasted could be used to irrigate feed crops, which would go far to stabilize the cattle industry.

In the eastern part of the region, one-fourth of all cultivated land, and by far the most productive part, is in flood plain areas. The economy of the entire valley is in large part based on the produce of these lands; the benefits which grow from protecting them from floods are therefore region-wide in effect.

In the central and eastern portions of the Arkansas Valley there is great opportunity for expansion of industry, both to process the raw materials and basic resources of the area into commodities so urgently needed to raise the standards of living within the region, and to employ the workers in excess of those required for efficient operation of its farms and forests. The development of the region's water power potentialities will be an important factor in making available the low-cost power essential to industrial expansion.

Pacific Northwest[4]

The Pacific Northwest is unrivalled in its potentialities for development of irrigation and water power. To a great extent the future economy of the region will be moulded by these developments.

The present plan for the control and utilization of the waters of the main stem of the Columbia River, which will form the backbone of the regional water development program, includes 11 dams and reservoirs of which 3—Rock Island, Bonneville, and Grande Coulee—are now constructed. It is estimated that this system alone, including the costs of electric power transmission, will cost at least $800,000,000. Supplementing this system will be numerous reservoir projects in the Snake, Willamette, and other tributary basins. Proposals for at least 75 additional reservoirs are under consideration in the region and many more undoubtedly will follow further investigation. Some, of course, will be eliminated as plans proceed and as the needs of the developing economy mature.

The potentialities which these future projects hold are enormous. The contemplated ultimate hydroelectric installations at the three existing Columbia River dams aggregate nearly 3,000,000 kilowatts. The potentialities of the Pacific Northwest region may be nearly fifteen times that amount. The significance of these figures is indicated by the fact that the total installed capacity of all hydroelectric plants in the United States today is less than 13,000,000 kilowatts.

Moreover, the possibilities for expansion of irrigation are almost as impressive. Approximately 5,000,000 acres, or about one-quarter of the total additional area in the Nation that is susceptible to reclamation through irrigation, lie in this area. Water supplies in excess of the requirements of new irrigation are available, if adequately controlled and regulated, to supplement deficient supplies now delivered to about 2,000,000 acres.

Public improvements to provide flood control, pollution abatement, and protection of the important fisheries also are needed in the region.

Other Areas

The examples which have been cited are all in river basins of such great size and importance that they have attracted general public interest. Other great basins which might have been named in the same category are the Mississippi River basin, with its great flood-control system of levees and reservoirs, the Colorado River basin, the Missouri River valley, and the Central Valley of California. Scattered throughout the United States are many smaller river basins that offer proportionate opportunities for regional development.

It should not be concluded that the development of the water resources of a region is a final and conclusive undertaking, which once done according to plan, leaves little more to do. That unfortunately is not the case. In the course of time, reservoirs fill with silt. Navigable waters require constant maintenance and improvement. Drainage structures, levees, and floodways deteriorate unless constantly repaired. Plants for sewage treatment and for public water supply must be maintained and skillfully operated, and even then become obsolete through technological improvements. Moreover, the ever recurrent shifts in population, industry, and land use, bring their own attendant water problems.

[4] Cf. Reports of the National Resources Planning Board: *Regional Planning*, Part I–"Pacific Northwest," 1938; and *Development of Resources and of Economic Opportunity in the Pacific Northwest*, 1942.

Need for National Water Policy

The billions of dollars that have already been spent by Federal, State, and local interests in providing for navigation, flood control, irrigation, water power, water supply, pollution abatement, and in otherwise conserving, controlling, and utilizing the nation's water resources have been spent without the benefit or direction of a consistent national water policy designed to produce the optimum coordinated development in the interests of all. Under existing policies, the planning, construction, and operation of each major type of project is either under the supervision of the agency which is generally responsible for the functional improvement concerned or is shared by several agencies. More than 30 Federal agencies are engaged on some type of active program affecting the use or the control of water. Each has its organic act approved by the Congress. Several such acts are overlapping, many deviate fundamentally from each other. Some, like those related to the important problem of pollution control, are inadequate.

Differences in functional policies, such as those between the requirements for repayment by local beneficiaries under the reclamation laws and the nonrepayment provisions for reservoir construction under the flood-control laws, have led to undesirable competition, not only between Federal agencies, but also between local groups interested in obtaining Federal assistance. State legislation and policies further complicate the situation, for they are even more diverse in character.

In some fields of action, the Federal Government has declared its policies in legislation. In these cases the tenor of each policy declaration can usually be traced to certain temporary conditions. Too little real thought has been given to the interrelation of these policies, or the effects they will have upon one another. In other fields, the Federal Government has engaged in action programs without any clear-cut declaration of policy. In fields such as the control of pollution, or improvement of municipal water supply systems, programs have been based upon general authority to construct or to help finance construction, often with employment creation as the announced objective. In the field of unemployment relief, variations in the development policy have occurred with great frequency.

Inconsistencies in policy have been the not unnatural outgrowth of the demands of a growing nation. As the Nation expanded geographically, and as the people of the Nation spread and shifted within its expanding boundaries, separate needs were met from time to time by special public works legislation. More than a hundred years passed between the first rivers and harbors project and the undertaking of the first Federal reclamation project. Many of these Federal laws were established before some of the States were admitted to the union. Bearing these facts in mind, it would be surprising if a unified national water policy did exist. However logical the development of these many separate Federal laws and policies may have been at the time they were adopted, together they now bring about a complex and confusing array of public works and service proposals which are difficult or impossible to coordinate.

Noteworthy examples of situations which have resulted from uncoordinated water development are plentiful.

Ohio River Valley

A compelling example is found in the canalization of the Ohio River. This project, providing for cheap transportation of raw materials and bulk products, contributed to the great expansion of industrial operations in Pittsburgh and other areas adjacent to the Ohio River. Concurrently, and to some extent consequently, there was rapid growth of mining operations in western Pennsylvania, West Virginia, Ohio, and Kentucky. This, in turn, caused substantial increase in discharges of polluting effluents, particularly acids, from industrial and mining processes into receiving streams, thus adversely affecting the industrial and domestic water supplies. While few would claim that the cheap waterway transportation should not have been provided, such adverse complications as these could have been reduced or eliminated if the national policy had permitted recognition of conditions which might arise partly in consequence of the project, and had provided Federal and State agencies with authority to take initial steps toward remedial measures.

Mississippi River Alluvial Valley

This area probably has witnessed as much piecemeal and uncoordinated development as any in the country. Protection of individual tracts of land from floods was initiated by private endeavor early in the 18th century. Each levee built increased the flood hazard elsewhere.

During the ensuing years, many millions of acres were included in such districts but there was no uniformity in the degree of protection provided, even though all were subject to ever-increased flood heights. This uncoordinated type of development was not unique to the alluvial valley, but after the disastrous flood of 1927 the unsatisfactory character of the development was so apparent that Congress recognized the protection of this enormous area to be a national problem. Since then several hundred millions of dollars of Federal funds have been spent in providing flood-control works consisting of levees constructed to uniform standards, reservoirs, channel cut-offs, spillways, and auxiliary bypass floodways. This program is nearing the final stages of completion although pro-

posals for extension of levees to large acreages not now protected are still under consideration.

Coincident with the development of the now superseded individual levee systems, hundreds of drainage districts were formed by private endeavor with practically no attempt at coordination. The result is a jungle of organizations, the majority of which are chronically in financial difficulties. Administration of many is inefficient, drainage structures are inadequate, and maintenance and repairs are neglected. The obvious result is that agricultural and industrial production within the area is far below its maximum capacity.

It is fortunate that Congress has now authorized the coordination of the protective works. However, in making its expenditures the Government has shown too little concern in land-use and other related problems within the region, and to their relationship to those of the Nation as a whole.

Missouri River Basin

This basin is an excellent example of a continuous river system encompassing climatic conditions varying from arid to humid, each with its diverse water needs and problems. The arid upper third of the basin is concerned almost entirely with conservation of water for irrigation, while the primary water problems in the lower basin are navigation, pollution control, and flood control. Water power is the only aspect of development which is common to both the upper and lower portions of the basin. The Federal Government has expended large sums in both of these areas in the water-development field. While increasing amounts of water have been made available to irrigation interests in the upper areas, they are still insufficient to meet existing demands. Similarly, while navigation facilities have been improved in the lower reaches, the desire for still greater depths has led to demands for additional waters for navigation purposes. Without further expensive storage by reservoirs, there just is not sufficient well-distributed flow to meet both demands.

Federal expenditures for these upstream and downstream projects, under differing Federal policies and under the jurisdiction of different Federal agencies, have not brought harmony to upstream and downstream interests; indeed, they have contributed to further misunderstanding between them. Development of the water resources of this basin, under a uniform policy and guided by a comprehensive understanding of the basin's interrelated problems, is very much needed to resolve the present situation.

Functional Policies

The foregoing illustrations show the effects of lack of consistent policy in specific areas; these effects are equally apparent when the various functions of different governmental agencies are considered. Existing differences in functional policies have widespread effects which are independent of basin boundaries. One of the most striking examples is the difference between the repayment provisions of the Reclamation Act of 1902 and the subsidy elements of the Flood Control Act of 1938. Under the provisions of the Reclamation Act, a farmer receiving water from an irrigation project must participate in the costs of the project through repayment of a specified sum over a 40-year period. In the same general region, perhaps not a hundred miles away, a farmer owning land in a frequently flooded overflow area may contribute nothing to the costs of a flood-control reservoir to protect his lands. In each case the farmer involved is able to convert lands to more productive uses, to more profitable cultivation. In the first instance the beneficiary pays his share of the direct project cost; in the second case he may or may not be required to contribute to the cost of the reservoir, depending upon the size and character of the flood-control project. Yet in both cases the Federal Government is instrumental in building and financing the work. The relation between the provisions of these two laws, and others in the water resource development field, promotes competition between Federal agencies, as well as between local groups interested in obtaining Federal assistance.

These illustrations, presented in simplified terms, all involve large areas and important national interests. They are indicative of the effects of the inconsistencies and deficiencies of the present heterogeneous national water policy. To a greater or less degree, they are applicable to practically every river basin in the Nation.

With the vast need for development of water and related resources which are before us, the United States cannot afford to continue under the present uncoordinated administration of laws and policies which, cumulatively have not been sufficiently effective in producing properly balanced development of our resources for the people of the Nation, for the people of regions, or even for the people of certain individual basins.

To improve the physical, economic, and social benefits from Federal projects, legislation is necessary on several important policy matters. This legislative action is needed not only for the post-war period but also to assist in the prosecution of the war program. The four policy matters indicated below have been selected from the National Water Policy report as currently most important. They represent a vital segment of the recommendations contained in that report, and warrant careful consideration by Congress at this time.

Authority already exists for clarifying and unifying other important policy matters by appropriate administrative or executive action.

Positive action of both types is sorely needed on the following items. Adoption of a uniform national water policy on these matters will not only promote unity in Federal operations, but will provide a basis toward which State procedures can be adjusted. In the light of what previously has been indicated in both this statement and the National Water Policy report, action by the Congress is needed to:[5]

Eliminate inconsistencies and conflicts among existing laws and the resultant regulations under which agencies of the Government conduct investigations and surveys relating to water resources, and finance, construct, and operate works for their control or utilization.

Adopt a policy limiting Federal contributions on projects to amounts warranted by the national interests involved, and providing, insofar as practicable, for an equitable distribution of project costs not only as between the Federal Government and local interests, but also among the Federal agencies and among separate groups of local beneficiaries.

Adopt legislation setting forth the policy under which the Federal Government will participate in projects to control the pollution of surface and underground waters.[6]

Amend the Flood Control Act of June 22, 1936, as amended, so as to make future Federal contributions toward the cost of flood-control projects conditional upon enactment by the States of legislation prohibiting further undesirable encroachment upon stream channels.

[5] See "National Water Policy," pages 371 and 392 of report *"Development of Resources and Stabilization of Employment in the United States* January 1941, by the National Resources Planning Board, published as H. Doc. 142–77–1.

[6] See Senate Bill 6857, 76th Congress, 3rd Session (passed by Senate) and House Report 4314, 76th Congress, 1st Session, and "Water Pollution in the United States", H. Doc. 155–76–1.

Items which require administrative or executive action include:

Each project or plan prepared by an agency of the Federal Government should provide for all useful purposes practicable of attainment, in that combination which will yield maximum total benefits at minimum total costs. To effect this, departments or agencies which are preparing plans should seek and obtain the full cooperation of other Federal offices which are engaged in activities that will affect or be affected by the project or program for which the plans are being prepared. In all cases where it is practicable to do so, interagency or interbureau cooperative investigations, organized to include asistance or advice from appropriate State and local interests, should be made to serve as the basis for the plans.

In determining the justification for projects or programs, proper account should be taken of the social, general, and potential benefits, as well as the economic, special, and immediate benefits; and agencies should make all practical allowances for shifting conditions by which the projects might be affected in the future.

A uniform policy should be agreed upon and followed by the Federal agencies concerning Federal participation in the financing, construction, operation, and ownership of all or parts of domestic and industrial water-supply and pollution-abatement facilities, and the protection of Federal equities therein.

Coordination of Federal projects, programs, and policies related to the control or use of water and related resources should be continued and improved.

* * *

To produce most in war, we are now coordinating all related activities. To produce most in peace, we must do no less. To do either successfully, all governmental agencies must work toward the goal of best development in accordance with mutually accepted and uniform policies.

VI. ENERGY RESOURCES DEVELOPMENT[1]

The dependence of our economy on mechanical and electrical power has been emphasized anew in recent months by the mounting demands of war production, not yet fully mobilized. Most of our consumption of fuel and power is industrial even in peacetime. Materials and machines for total war on a world-wide scale have sent the volume of production far beyond any peacetime levels, even with curtailment of nonmilitary consumption.

Power and Fuel for War

Such requirements have already strained our ability to produce and transport goods and energy supplies to the right places at the right times, and to utilize them for first purposes first. It will be surprising, and we shall indeed be fortunate, if there is anything left for nonessential use. In fact the prospects are that a very hard definition of "essential" use will have to be applied, if there is to be enough.

Electric power in particular has shown spectacular increase. Here we have been experiencing for decades a compounding effect—increased industrialization, increased mechanization, increased electrification. Within 2 or 3 years there was ridicule for the idea that we would ever need the output of great public hydroelectric projects in the Tennessee Valley, in California, and on the Columbia River. Yet in 1942 we have been compelled to build aluminum reduction works using huge amounts of power in a place where power is produced from fuel at costs by no means low, because this was the only place with sufficient surplus generating capacity.

War and the Need for a National Policy

There will be lessons to be learned in fuel and power during the coming months of war. They will teach the wisdom of a national policy for energy resources directed toward full mobilization of all our resources in war or full utilization of those resources in peace. Such a policy would contain these fundamentals:

1. It would emphasize the development of low-grade energy resources and of those in ample reserve; conversely, it would conserve high-grade and scarce resources. In this connection it would consider costs in terms of manpower and materials, as well as money. Measures to decrease waste in production and in use would be designed and adopted. Methods for stimulating better use of fuels and power would be devised, taking advantage of education, regulation, public credit, and the police power. Federal, State, and local governments could aline their influences to these ends.

2. It would move toward integrating our energy resources in the several regions of the country with the object of increasing their total potential for peace or war. The policy would also embrace organizational procedures to create agencies, public and private, capable of operating the great works involved and of maintaining and improving their performance as constructive factors in the life of each region. Administrative and governmental policies would be shaped to promote this policy through strengthening the democratic principle of local, State, and regional responsibility in the national interest.

Large-Scale Low-Cost Power Supply

One element of policy is clear from immediate past controversy: There should be a unified national plan for electric power supply. An essential part of such a plan wil be the coordination of power generation and wholesale distribution, implemented by a comprehensive system of low-cost generating stations and low-cost, heavy-duty transmission lines. This national system or "grid" would be designed initially on a regional basis, would look toward operation on a national scale, and would be authorized as a part of the implementation of a national program for low-cost supply of power in the public interest. As a safeguard against improper use or sequestration of such low-cost power supply, the authorizing legislation should require preference to public agencies and nonprofit groups among wholesale purchasers according to the precedents heretofore established by the Congress. Recommendations in respect to the need for a national system of power supply were stated as follows in a previous report:

"Transmission of electric energy is in many social and economic essentials closely akin to transportation of commodities. For the electric requirements of the future, the national interest will be served best by coordinated systems of interconnections that will make available in wider markets energy derived from the most economical sources, whether large-scale hydroelectric plants or efficient steam plants. Transmission systems of the present were integrated from smaller units to meet compelling needs for more energy supply at lower costs. There is no indication that this growth will not continue. For most industrial regions, at least, the outlook is for twice as much demand within the next decade or so. Such

[1] Prepared under the direction of Assistant Director Ralph J. Watkins, by Messrs. Samuel H. Thompson and Wilbert G. Fritz of the Board's staff.

greatly increased needs will call for systems of supply based on large efficient steam-electric generating stations in areas of low-cost fuel, coordinated with storage hydroelectric plants by transmission networks extending over several States.

"A basic system of publicly operated high-tension lines will speed this necessary development. Transmission links between important load centers and power sources should be planned immediately as elements in such a back-bone system, not only for economy but to protect the power supply of industrial regions vital to the national defense." [2]

Problems of Coordinated Operation

There is need for a coordinated policy in respect to operation of Federal and other power projects, and the distribution and utilization of supply. Organizational problems here are linked with those of operating river-control works performing a wide variety of functions not related superficially to power, but acting jointly with power in their fundamental effect on the life of the region. Study should be directed toward developing the best possible forms of organization for this purpose, exploring and perhaps adopting various alternatives that seem best suited to particular conditions.

One alternative for consideration would be a national agency or corporation authorized specifically to guide the development and use of electric power in the public interest. Such a corporation could implement in the power field the Federal Development Corporation suggested for other conservation purposes elsewhere in this report. It would operate electric power facilities in public water development projects, cooperating to this end with other national agencies and with regional, State, and local public bodies. Through subsidiaries it might act as a joint owner in copartnership with other public bodies and even with private groups, where and as indicated by the public interest in each area. Operating hydroelectric and steam-electric stations and buying and selling power for mutual benefit on a self-supporting basis, it would deliver low-cost power to any wholesale buyer over transmission systems owned or operated by the corporation or over other lines operated as common carriers.

Local and Rural Distribution

At all events control of the distribution function must remain in the hands of local groups. Independent distributing organizations, whether public, cooperative, or private, would purchase their wholesale supply from wholesale agencies operating as a part of, or in cooperation with, publicly owned supply systems; but they would remain free to purchase from better sources if available or to generate their own supply. Whatever form of national agency is adopted, special attention should be directed toward furthering an expanded program of electrification in rural areas along the lines already planned by the Rural Electrification Administration.

"Wider use and lower cost of domestic and rural energy supply should be advanced through promotional rate schedules, more progressive service, and extension of lines; through encouraging the development and wider distribution of low-cost efficient electric appliances, designed for the requirements of farm users and of lower-income groups, with financing at low interest rates by manufacturers, utilities, or public credit agencies. In the future as hitherto, public power developments may appropriately take the lead in these policies, particularly through cooperative action with the Rural Electrification Administration." [3]

Power and Fuel at the Point of Use

A central purpose of national policy for electric power will be to advance the fuller and more effective use of water power and of fuel resources in combination with each other and with other resources. By governmental controls in the public interest, by judicious use of the public credit, by public development and exploitation of the energy resources themselves where appropriate, the use of power and fuel at the point of use should be improved—on the farm, in the household, in commerce, and in industry. Such improvement should include the exercise of influence and research toward better distribution of industry and better utilization of other natural resources in the public interest.

Lines of Improvement

Specific recommendations for action or planning in the immediate future along these lines are suggested in the following list:

A. Electric Power

1. *Resume and enlarge the program of multiple-purpose river-basin projects* involving power, deferred or suspended by war. Detailed schedules are available.

2. *Plan the national power supply for the post-war decade*, based on estimates of production requirements

[2] National Resources Planning Board, *Development of Resources and Stabilization of Employment in the United States*, Part I, p. 46, January 1941.

[3] National Resources Planning Board, *Development of Resources and Stabilization of Employment in the United States*, Part I, p. 46, January 1941.

and utilizing to the full the possibilities of multiple-purpose water development. Keep power supply up to that required for full use of man-power with improving technology, for war or peace.

3. *Resume and expand measures to make more effective the utilization of electric power* in farms, homes, commerce, and industry and for public purposes, with due regard for national defense. Governmental means already adopted and proved practical will be used for the most part:

(*a*) Regulation of wholesale supply:
- (1) State and local
- (2) Federal, interstate
- (3) Safeguarding of public-power operations against (a) improper private attack, (b) poor administration, (c) political interference

(*b*) Use of public credit and other means to finance and encourage extension and development of service.
- (1) Rural. Extend the field systematically to reach all farms capable of substantial improvement. Develop cooperative purchasing, especially for power-using equipment.
- (2) Domestic or household. Adopt measures to promote wider use of power appliances, primarily through standardization, quantity production, and more economical methods or distribution.
  - (a) Underwrite long-term purchases with public credit if necessary, to cut cost, widen markets, and stabilize manufacturing and marketing.
  - (b) Integrate with the housing program.
- (3) Commercial and industrial. Use public power supply and regulation to promote rational location of industry. Assist through research in reducing the cost of developing and marketing improved equipment. Insure development in the direction of national defense, in the broadest concept, using subsidies or guarantees if necessary.

B. Petroleum

1. *Encourage the conservation of petroleum resources by introducing scientific production methods to recover a larger proportion of the available petroleum.*—Since December 1941 drilling for petroleum and natural gas has been regulated by a conservation order approved by the War Production Board which restricts the spacing of wells and encourages a larger production for the equipment consumer and a higher yield from the total volume of petroleum in the ground. This Conservation Order constitutes an important step toward a more thorough conservation of petroleum resources. Unit operation should be introduced for all new pools and for old pools requiring repressuring for economical operation. The benefits of unit operation are widely recognized but the plan has been introduced only on a limited scale, owing to the diversity of interests of property owners and the consequent attempt by individual operators to obtain a larger share of the petroleum despite the wastes involved.

2. *Stimulate the more efficient utilization of petroleum by promoting improvements in the design of consuming equipment.*—During the war period rapid gains have been made in techniques for producing high-octane motor fuel from petroleum. This improvement in the anti-knock quality of motor fuel will make possible the use of smaller motors in automobiles and will facilitate the development of new designs. Rapid gains have also been made in Diesel power for aircraft, tractors, and trucks. Diesel engines consume a much smaller volume of fuel for a given power output than the ordinary gasoline motor and in addition require a less highly refined product. Rapid gains were being made in the introduction of Diesel power for civilian use until it became necessary to divert most of the production to war requirements.

C. Natural Gas

1. *Promote the conservation of natural gas by the extension of unit operation as indicated above for petroleum, by prohibiting waste of gas in conjunction with oil production, and by reserving the gas for high-grade consumption.*—In many areas gas is produced as a byproduct of petroleum or natural gasoline extraction and is either burned or blown into the air. Where there is no market for natural gas, production of petroleum and natural gasoline should either be prohibited or producers should be required to return the gas to underground reservoirs to maintain well pressures and to prolong the life of the flowing wells.

The synthetic rubber program is calling for an expanded production of carbon black. If the wasteful methods of production of this essential component of rubber tires are allowed to continue, it is possible that the consumption of gas for this one use alone will exceed the consumption for all residential uses. Alternative processes are available which can reduce the consumption of gas for carbon black manufacture to only a fraction of the present levels. It is also desirable to shift the manufacture to areas of surplus gas which are remote from major markets.

Interstate transmission of natural gas for power plant consumption and other low-grade use should be greatly restricted.

2. *Guide the development of long trunk pipe lines and of storage capacity developed in conjunction therewith.*—Owing to the rapid depletion of natural gas reserves in the Appalachian area and to a lesser extent in California, it will become necessary in the post-war period either to reduce gas consumption or to meet requirements by building manufactured gas plants or by connecting the areas by trunk pipe lines to the Gulf coast and mid-continent fields. It is probable that projects of unprecedented size will be required. The Federal Government should supervise these projects in order to promote an efficient system of transmission and to assure that the supplies will be equitably distributed among consuming areas. Operation of the lines either as common carriers or as Government projects is the most effective means for preventing unfair discrimination.

In order to achieve an efficient use of pipe line capacity over the long distances involved, the Federal Government should promote underground storage of natural gas near areas of consumption and the construction of capacity for storing the gas in liquefied form above ground.

D. Coal

1. *Encourage the adoption of improved mining methods and the modernization of mines.*—Many of the mining methods now in use are obsolete and wasteful of coal resources and labor. Coal allowed to remain in the ground as pillars to support the mine roof is one of the main sources of loss. This loss can be reduced by changing the system of mining to correspond with that in use, for example, in British mines. The adoption of low mining machines suitable for mining coal in thin beds should be encouraged to permit mining of reserves that would otherwise be lost.

E. Space Heating

1. *Facilitate the conversion of coal from raw form into fuels that are more convenient and efficient to utilize.*—The war period has resulted in the discovery of new uses for various byproducts of coal, and this development will stimulate production of coke as well as liquid fuel and manufactured gas. Greater use of these derived forms of fuel will lead to less pollution of the atmosphere by incomplete combustion.

VII. PUBLIC CONSTRUCTION PROGRAM PLANNING[1]

That there will be a public works program when the war is over there can be no doubt. We have always engaged in building public works, since our earliest days, in prosperity as well as in depression, in war as well as in peace. The complex mechanized civilization of which we are a part is utterly dependent upon the facilities which we designate "public works." Today, in the midst of war, the Government is building for war purposes at a terrific rate, a rate so great that it taxes the construction resources of the Nation. Indeed, we have had to forego the building up of the peacetime plant that our advancing country requires. But tomorrow, when peace is again achieved, we must resume the creation of that plant. There may be much building or there may be little, but that there will be building we cannot doubt.

Obviously, then, in planning for public works in the post-war period, our attention must be directed toward the questions of how much and what kinds of public works are to be undertaken. We must consider the total public works activity of the Nation, including not only the portion undertaken by the Federal Government but also the portion undertaken by States, cities, and other local governments. We must obtain some measure of the magnitude of the program that will be undertaken if Government policies now existing are to prevail, particularly those policies regarding aids to States and local governments. We must determine upon the desirable amount of national public works activity in view of the probable post-war economic circumstances. When we have made those determinations we may intelligently recommend modifications of present policy to bring about a program of the desired magnitude and type.

It is easy to imagine conditions under which Government policy should be directed toward increasing the amount of public works. Under certain other conditions it might, conversely, be desirable to hold the total program to a practical minimum. If we should want to have a large program, the funds appropriated for Federal public works might be greater and those appropriated to aid local construction might be increased and given a wider scope. On the other hand, to curtail, it should be necessary only to reduce Federal construction appropriations and to restrict assistance to local governments. Under a unified executive budget, such control could be accomplished by regular procedures, without the necessity of an emergency program at all.

Viewed in this light, the post-war public works program that we shall undertake will be, in reality, the post-war version of our regular public works program, rather than a special purpose program set up parallel to a program of regular activities. Clearly, there will be no occasion to attach special wage or employment conditions to any portion of a program that is essentially unitary.

General Policies

We now recognize that in order to win this war we must ultimately curtail drastically every civilian activity that does not directly further our war effort. And therein lies the root of our major post-war problem—converting the war industrial machine we shall have built to peacetime production purposes when the war in ended. All other post-war policies must be subordinate to the major policy of hastening this conversion and minimizing the effects of its shock upon our economy.

Particularly, our post-war public construction program must be so planned that it will aid, and completely avoid hampering, the rapid reestablishment of peacetime production. The program can further this vital conversion process if it provides at the right places and at the right times those public services that will facilitate, support, and encourage peacetime industrial activity. On the other hand, if the program should be too large, too soon, it would add to the inflationary tendencies inherent in the immediate post-war situations; or, if it should comprise too many large projects, which ordinarily must be carried through to completion, the program may be large too long, and extend into a period when it would compete unduly with our industrial conversion efforts for man-power, materials, and money.

Obviously, we cannot now foresee all the conditions that will prevail when the war is over. But we can observe trends and take account of the conditions likely to arise out of the war itself in setting up the general criteria for our program.

For example, it is probable that we shall be faced with a shortage of construction equipment when the war comes to a close. The present construction program is so great that existing equipment is being worn out rapidly, far more rapidly than it is being replaced. It is even likely that we shall have converted much of our equipment manufacturing facilities to the making of munitions. Certain types of construction materials may likewise be difficult to obtain at the end of the war, as a consequence of wartime conversion and simplification

[1] Prepared under the direction of Assistant Director Frank W. Herring, by Robert W. Hartley, Chief, Federal Program Section, of the Board's staff.

policies. In other words, we will probably enter the post-war period with limited construction capacity. Clearly the program we should plan for that period must take due account of what that capacity is likely to be and of the steps that would be required to expand it if necessary.

During the war we are deferring the construction of every public construction project that we can safely do without and if the war lasts long enough, we shall also eventually defer, to the greatest possible extent, the ordinary repair and maintenance of our capital facilities. Certainly then, when the war ends, catching up with deferred maintenance and repair of our public service plant should, in general, be the first order of business for our public construction activities, for that plant will probably have fallen into a bad state of disrepair. Next in order should come those projects necessary to take the place of outworn or outmoded facilities. Preference should then be given to those structures needed to bring normal public service activities up to par or that will encourage or facilitate the war-to-peace industry conversion.

The foregoing categories will represent our most urgent post-war needs. When the satisfaction of those needs is well under way, we shall then have the opportunity to undertake those major developments and redevelopment programs that our national aspirations demand.

From the point of view of technological progress the war is not an unmitigated evil. We must carry over into our post-war public construction programs the technical advances we shall have made under the pressure of wartime necessity. For example, there will have been far-reaching changes in construction specifications, materials and procedures, many of which we already see. Unduly restrictive building codes and overly cautious standard specifications are being relaxed. New and less expensive building materials are being developed and used; the sizes and forms of old materials are being standardized. More efficient construction procedures are being introduced to meet the pressing wartime schedules under labor-shortage conditions. These changes have all been made in the name of the war emergency, but in many instances they represent substantial public gains which should be of permanent value. They should not be sacrificed after the war is over to the urgings of groups having special interest in furthering the use of obsolete construction materials or methods.

Finally, our general policy for a post-war public construction program must be such as to assure that projects will always be so selected as to provide the maximum service benefits. Work should not be undertaken just because it is work and for no other reason. Rather, our effort always should be to select and construct those projects which will provide the maximum of public service for the minimum outlay of labor, materials, equipment, and public funds.

Plan Preparation

Authority and funds are needed to transform the general idea of a post-war public works program into the hard realities of engineering plans. Without adequate financial support for the necessary preliminary engineering operations, no effective program can be prepared.

Federal agencies have authority to prepare their programs, because of the Employment Stabilization Act of 1931, but adequate funds are not available to them to develop the over-all plans on which such programs should be founded. Both authority and funds are lacking in many States and cities to engage in the preparation of the local public works programs which will loom so large in the national total. Federal agencies should now be provided with enough funds to enable them to plan soundly for their post-war construction programs, and Federal financial assistance should be provided to permit State and local governments to do likewise. Where necessary, State governments should enact enabling legislation to authorize such programming and should assist and consult with their local subdivisions to encourage them to prepare their programs.

So much has been said in the reports, "Development of Resources and Stabilization of Employment in the United States—1941," and "National Resources Development—Report for 1942," on the subject of detailed plan preparation for the post-war period that little more need now be added. Plans must be prepared for geographic and political areas into which the country is divided, as well as for public service activities of national scope. The projects that are the meat and bones of these plans must be surveyed, investigated, and reviewed, and the proposals must be modified, if necessary, to provide for their effective coordination one with another. The order in which the projects are to be undertaken must be established and the manner in which they are to be financed determined upon. Detailed blueprint plans and specifications must be made so that they may be ready when needed.

Every effort should be made to obtain the enactment of the legislation necessary to enable the appropriation of funds to carry on the following specific activities:

1. Examinations, surveys, and investigations of public construction projects proposed as part of comprehensive plans for the protection and development of the resources of the Nation, such plans to be prepared by the Federal, State, and local governmental agencies concerned.

2. Legal studies and forms of legal proceedings to be made in advance of the authorization of projects so

as to avoid legal obstacles and delays in inaugurating construction of State and local public works.

3. Comprehensive plans and programs, including regional development plans, metropolitan, county and city plans, functional development plans, and 6-year programs of public works to be prepared by Federal, State, and local agencies in order (*a*) to provide adequate consideration of all the developmental needs of a community or an area in appropriate balance, and (*b*) to establish a definite and effective order of undertaking the most needed projects.

4. Engineering plans and specifications to be prepared for specific public works projects by allotment of funds to Federal agencies and through advances of funds to State and local governments.

The enactment of such legislation will not interfere with our war activity by diverting planning and designing skills. The peak of the war-time construction boom will occur in the near future and thereafter war demands for architects and engineers will begin to slacken.

Detailed plans and specifications should be prepared for at least those public construction projects that are to be undertaken during the first year after the war. The design details for any project, however, should not be carried beyond the point where possible advances in technology would make them obsolete. Adequate funds should be appropriated by the Federal Government as soon as possible for such advance planning purposes.

If we want to have in readiness a total program of about $3,000,000,000, roughly equivalent to the average annual pre-war public-works expenditure of the Federal, State, and local governments, something like $90,000,000 will be necessary for the preliminary planning and engineering. Less than this amount could suffice as a Federal appropriation, however, for it may be assumed that a certain portion of the State and local preparation can be financed independently of Federal help. The sum of $60,000,000 should be enough, of which $20,000,000 should be made available to the Federal construction agencies, and the balance, $40,000,000, should be advanced to State and local governments to aid in financing plan preparation by their own staffs and consultants. State and local governments receiving these advances should be required to bear immediately not less than 20 percent of the cost of project plans and to repay to the Federal Government the advances made to them when funds become available for actually constructing the projects that have been planned.

To provide funds some years in advance for the survey and engineering work involved on public construction projects presents, of course, the hazard that costs will be incurred on some projects that may never be undertaken. To the extent that this occurs, the procedure would appear wasteful. However, the hazard is not particularly great if the financing of this preliminary work is properly administered. Exercise of sound administrative judgment can reduce to a minimum the losses involved. In any event, the losses that would come about might quite properly be considered as low-cost insurance against a post-war emergency. The cost of such insurance would, without question, be far less than the cost of being caught unprepared, and it assures that when the time comes, plans will be ready and, if the Congress so legislates, men and materials can be put to work more quickly and on better undertakings than would be the case otherwise.

State and Local Government Financing

Many of our States and local governments today are finding that their tax receipts are in excess of their expenditures for the first time in more than a decade. These surpluses are the result of increased collections arising from the high level of business activity, on one hand, and the curtailment of certain public activities due to materials and manpower shortages, on the other. But, just because labor and materials shortages are forcing the deferment of many public works undertakings, there will be a general lowering of the standard of public services dependent upon them. Out of this situation comes the paradox—State and local governments can now obtain the money for the public works and facilities they need, but they cannot now spend that money for those purposes.

This deferring of construction and even of repair and maintenance operations during the war will store up a demand for public works and improvements that can be met only by a large volume of construction operations in the post-war period. If State and local governments are to meet that post-war demand for public construction, it would also appear to be wise to accumulate during the war the means to finance it. And more important, such a State and local fiscal policy would be in harmony with our national wartime fiscal policy.

Our Federal fiscal policy today is directed toward preventing inflation through curtailing civilian spending as well as toward raising the revenue to help finance the Government's war outlays. If State and local governments would maintain their current tax rates instead of reducing them, even if revenues should be more than ample for budgetary needs, they would thereby be coordinating their fiscal policies with one of the objectives of our national fiscal policy. At the same time, they could also accumulate financial reserves for undertaking their public construction programs in the post-war period. Where necessary, enabling legislation should be promptly enacted by State and local authorities so that current surpluses may be covered into reserve funds. The Federal Government should en-

courage the accumulation of these reserves by issuing a special series of War Savings Bonds at attractive interest rates for sale only to State and local governments to absorb surplus funds and to assure their liquidation without loss when that becomes necessary.

The second aspect of this suggested Federal action particularly merits attention. Should the States and local governments begin to accumulate financial reserves, the problem of their proper liquidation without loss to themselves becomes one of paramount importance. If such liquidation is attempted in the open market, great losses can occur, particularly during a general deflationary period. If these reserves are put into obligations of the Federal Government which can be redeemed at a fixed rate, liquidation losses become impossible. This feature of Federal action alone is of importance equal to that of all the others. It would apply even if States and cities should succeed in accumulating reserves without Federal encouragement.

A recent report of the American Municipal Association shows that so far local governments in eight States have been given the necessary legal authority to lay aside money for financing public improvements in the post-war period. In 1931 Oregon adopted the first law of this kind. California cities were authorized by a 1937 law to set up cash reserve funds by ordinance specifying their use. Nebraska's fund-enabling legislation of 1939 limits levies, to be approved by voters, to a 10-year period. New York, Michigan, Washington, Kentucky, and New Jersey adopted cash reserve fund laws in 1941 and 1942.

Two additional States have since joined the eight cited above. In 1939 Nevada legalized the acuumulation of municipal reserves. Massachusetts did likewise in 1942.

As State and local surpluses occur during the war, tax reductions may appear attractive to local taxpayers. The result of such reductions now however, might well be insuperable difficulties in the post-war period in obtaining adequate revenues for necessary public construction. A premium placed now on local government thrift will be far better than relief of local government poverty in the future.

Grants-in-Aid

While the Federal Government policy should be directed toward encouraging State and local governments after the war to be self-supporting as far as practicable, steps should be taken now to revise Federal policy regarding grants-in-aid for State and local public works construction. The various public works grant-in-aid programs carried on since 1933, even those extending into the war, have never been based upon a recognition of the national benefit that accrued from certain types of works and structures customarily built and administered by State and local governments. Also, overlapping programs have presented alternative methods of financing the same local project, which were not equivalent in their bearing on local funds with the inevitable result that State and local officials have "shopped around" among Federal agencies to obtain the most favorable deal.

Congress should adopt a grant-in-aid policy that will acknowledge, in good times as well as bad, the Nation's stake in certain public services for which State and local government customarily carry administrative responsibility. As a matter of regular policy, the cost of the structures that make those services possible should be shared to the proper degree by the Federal Government at all times, even under conditions of full employment. Conversely, structures whose benefits are strictly local should receive little, if any, Federal assistance.

The proportion of the cost to be borne nationally under such a regular policy would not be uniform for all types of works. Rather, in times of full, or nearly full employment, it would vary according to the extent of the national interest in the service each type provides, while in periods of increasing and widespread unemployment the variation would be in terms of the national benefits from the employment created by the construction process. For example, in normal times the national interest in maintaining a generally adequate level of health protection and educational standards is such that Federal grants for the construction of pollution abatement works and school buildings might well be made, while local service streets and similar local improvement works might properly be considered works entirely of local responsibility. On the other hand, in times of increasing unemployment, grants might be made for the construction of those local service works that would provide a large amount of employment.

In other words, the grant-in-aid system should be so designed that a normal grant is set for each type of works in terms of the national interest in the purpose of the type, and then the grant should vary above the normal in terms of general employment conditions.

Loans

Another aspect of post-war financial policy that requires clarification is that concerning Federal loans to State and local governments. In the past ten years practically all such loans have been for the purpose of encouraging public works construction. But what is

frequently overlooked is that the policy of providing Federal loans grew out of a credit stringency not limited solely to public works obligations.[2]

To avoid future difficulties in floating State and municipal bonds such as the difficulties that prevailed during 1932 and 1933, an appropriate agency of the Government should be authorized to act as a general municipal credit bank in any period of severe credit restriction. In this way, State and local public works construction may be facilitated by easing all financing operations of State and local governments.

In lieu of such credit banking operations consideration might be given to a system of Federal guarantees for State and local issues in a manner similar to the way the Federal Government currently insures the mortgage risk in financing private housing construction.

Finally, the Federal Government should be prepared as a matter of regular procedure to make loans for the construction of selected public works projects to be built under the auspices of State and local agencies, particularly those which would also be subject to assistance in the form of a grant. The rate of interest on these loans should be those at which the Federal Government is able to borrow money in the open market. To simplify administration, both grants-in-aid and loans for a particular type of public construction should be made by the same agency.

Administration

Adequate coordination of Federal public works construction and survey activities does not yet exist. Its lack will become glaringly evident in the post-war period when public construction programs are resumed.

The Federal Government's administration of public works programs has been the subject of many studies. To eliminate the administrative confusion and conflicts of jurisdiction that have been disclosed so frequently, these studies have frequently recommended consolidation of the Government's construction activities into one administrative unit. From such a proposal arises the dilemma: While such a department would make easier the administration of a public works construction program in relation to the Government's participation in construction as such, it would make more difficult the administration of other phases of the Government's activities that are intimately related to public works undertakings, e. g., the regulation and promotion of transportation, the control of agricultural production, etc. Perfected interdepartmental coordination of construction operations is badly needed to smooth administration.

Improvements in the survey, planning, designing, and construction procedures of the Government's construction agencies have been suggested by the Board at various times which, if effected, would eliminate a great deal of the confusion and duplication of activities, and would lead to better authorization directives from the Congress. Improved procedures would permit the construction of public works that would provide better or more widespread services at equal or less cost, thereby conserving the outlay of materials, men, and public funds.

Some of these improvements can be obtained by Executive action alone. Others will require legislative action by Congress.

For example, appropriations for the construction program should be considered and enacted early in the year to permit the program to be undertaken during the approaching construction season. Under present practices many of the construction items are appropriated for as late as June or July; by the time the steps preliminary to construction have been taken the construction season is largely over. Furthermore, budgeting and appropriating procedures should be devised so that the entire construction program could be considered by the Congress at one time; otherwise it is almost impossible to gear the appropriating mechanism to the adopted policy of relating the Government's construction activities to the Nation's economic health. Both these improvements could be accomplished through the establishment of a unified executive budget, to be accompanied by supporting material which would include an analysis of the total construction program proposed.

[2] Cf. Development of Resources and Stabilization of Employment in the United States—1941, p. 18.

VIII. EQUAL ACCESS TO HEALTH[1]

The health of the individual is the concern not only of the individual himself but of society as a whole. Disablement and loss of ability to participate in production is a waste of the Nation's most valuable resource. Every day lost because of illness, accident, or premature death is a day given to the enemy. Every dollar spent in maintaining in idleness, or institutions, those who are rendered incapable by reason of previous neglect is a dollar wasted. The state of the health of the Nation becomes a matter of acute national concern when the needs of war call for the most effective utilization of our man and woman power. But here, as elsewhere, war serves merely to throw into relief unpleasant facts which the less demanding ways of peace enabled us to disregard. This is especially true in regard to health.

Realization that all was not well with the health of the people was forcibly brought home to the Nation when the first results of the medical examination of selectees were made known. These indicated that more than 40 percent of examined men were being classified as unfit for general military service while more than one-quarter were being rejected as unfit for any type of military service. The results of the selective service examinations should, however, have occasioned no surprise. In the last decade a great body of material has been accumulated, all of which points to the fact that if the health record of this country is, as often claimed, the best in the world, the level of health elsewhere must be low in the extreme. In 1938, the comprehensive report of the Technical Committee on Medical Care revealed an alarming amount of sickness and ill health. It was estimated, for example, that on an average day of the year over 4 million persons were disabled by illness. The general findings of this Committee as to the state of the Nation's health were confirmed by almost every participant in the National Health Conference which called together representative citizens and professional experts from all parts of the country.

Estimates by the United States Public Health Service indicate that on the basis of a peacetime labor force, some 400,000,000 man-days are lost annually from all types of disabilities. The economic cost amounts to 10 billion dollars. In 1940 this loss of working time was 50 times greater than that due to strikes and lockouts. More recently the U. S. Employment Service has reported that there are approximately 400,000 disabled persons registered at the public employment offices.

These over-all figures are confirmed by a wide range of studies of the health of particular groups in the population. Health examinations of school children have revealed a disturbingly high proportion of defects calling for, but all too often not receiving, remedial treatment. Studies of recipients of different types of public aid have also indicated a high incidence of ill health among these population groups. Indeed, in normal times ill health must be classified as a major cause of dependency.

But sickness so severe as to require absence from employment or confinement to an institution is only the most extreme manifestation of departure from a condition of full and vigorous health. Only slowly is the Nation coming to realize that there is a wide gap between absence of specific disease and a completely harmonious and effective functioning of body and mind. Experts in nutrition have recently emphasized the contribution that adequate and well-balanced meals can make to higher-than-average levels of well-being and have drawn attention to the wide departures from this standard that characterize many sections of the population. Studies by the Bureau of Home Economics indicate that in 1935–36 only about one-fourth of the families in the United States had diets that could be classified as good nutritionally. More than one-third had diets that could be classified as fair, while another third or more had diets that were definitely deficient in important nutritive elements.

Among the objectives of post-war planning, conservation and enhancement of the health of the people must occupy a prominent position. We must seek not merely to avoid the loss through ill health, accidents, and premature death of our most valuable national resource and to eliminate the unnecessary costs of maintaining those who are rendered incapable by reason of previous neglect, but we must also see that it is possible for all our people to enjoy a state of buoyant health and vigor. To achieve these objectives will call for action along many lines.

I. Elimination of All Preventable Diseases and Disabilities

The widespread prevalence in our country of preventable or controllable disease or disability is a sad commentary upon our national common sense. The very existence in our midst of malaria, hookworm, smallpox, and pellagra, and the prevalence of venereal disease and tuberculosis, in view of contemporary knowledge of techniques of control, is nothing less than a national disgrace. The loss of life due to preventable infant and

[1] Prepared under the direction of Assistant Director Thomas C. Blaisdell, by Dr. Eveline M. Burns, of the Board's staff.

maternal mortality and the prevalence in later life of physical and mental disabilities and constitutional impairments that could have been arested by early diagnosis and treatment, the magnitude of our expenditures on institutions for the care of mental and tubercular cases, all testify to the failure of the Nation to appreciate the importance of preventive action.

The effectiveness of positive and preventive health measures is forcibly suggested by the great differences that now exist between the mortality and the morbidity records of the different States. In 1940, the maternal death rate for the country as a whole was 38 per 10,000 live births. In North Dakota the rate was only 17, but in another State it was as high as 68. The death rate of infants during the first year of life for the country as a whole was 47 per 1,000 live births; Oregon and Minnesota had succeeded in bringing the rate down to 33, but in another State it was as high as 99.6. The contrast between different sections of the country is equally marked when other health indices are considered. Very broadly it can be said that the health record of the southeastern and the southwestern States lags far behind that of the rest of the country, especially New England and the Middle Atlantic States.

The first task of national health planning must obviously be the closing of the gap which now exists between our knowledge of what can be done and the steps we have hitherto taken to make effective use of that knowledge. The following types of action would seem to be indicated:

1. The Development of Adequate Public Health Services

Much of the improvement in the Nation's health which this century has witnessed can be credited to the development of public health services. Communicable disease control, immunization and innoculation services, sanitation measures, protection of food and drugs, the collection of essential health records and data, the operation of hospitals and institutions for the care of mental and tubercular cases have come to be accepted as the normal activities of the health department of a progressive community. Yet many cities and counties are still without some or all of these basic services.

As of June 1942 there were over 1,200 counties which were without the services of any full-time local or district health department. While water supply and sewage disposal facilities are commonly taken for granted by our urban population, surveys made before the war indicated that there was a need for the construction of facilities for improvement of sanitation totaling $2,500,000,000 in capital cost during the next 10 to 20 years. Where health departments existed they were in many cases understaffed and restricted in their activities by financial limitations. In consequence, many types of illness, which would be amenable to attack by organized community action, continue to take their toll. Diphtheria and typhoid fever, diseases for which effective control measures have been known for years, cost the Nation 3,000 deaths in 1940. Tuberculosis will yield only to a more complex program including case finding by contact, tracing, and examination by X-ray; isolation and treatment of active cases; and follow-up of arrested cases. Recent rapid advances in techniques of venereal-disease control require additional organization and funds to make these methods effective. Malaria can be controlled only by organized community action and at considerable expense. Cancer, one of our leading causes of disability and death, is still not preventable, but increasing the availability and utilization of facilities for diagnosis and treatment could greatly reduce its ravages.

Equally marked is the need for more constructive leadership and a broadened view of their functions on the part of many health departments. The very success of public health service in the past calls for changes in the area of operation of the public health service of the future. Many communicable diseases, the traditional public health concern, are no longer numbered among the chief causes of death. Meanwhile, knowledge of the causes of, and of methods of diagnosing, treating, or controlling, a number of other important diseases has steadily increased. Application of this knowledge calls for a more positive attitude on the part of many health departments. Largely through Federal stimulation, attention has indeed been focused more recently on problems associated with maternity and childhood. But, by and large, the public health departments have continued to regard themselves as educational and law-enforcement agencies, and there has been no wide acceptance of general medical care or the operation of facilities as a field for development, even when these facilities bear a direct relationship to the health of the community.

To exploit to the full existing knowledge of preventive health measures, two steps are therefore needed: The appropriation of adequate funds, and a broadened conception of the potentialities of public health services. Since 1936, Federal funds, under the Social Security Act and the later Venereal Diseases Control Act, have stimulated a great development of basic public-health services throughout the Nation. The number of full-time public-health departments increased from 540 to 976 in the 7 years following the passage of the Social Security Act, while expenditures by all levels of government for venereal-disease control increased threefold from 1938 to 1941. Appropriations are, however, still inadequate, and it is significant of the general attitude

toward prevention that in 1940 the Nation was spending only the equivalent of about $1.35 per head for all types of health services, but almost $30 per head for the care of sickness. Additional appropriations under the health provisions (Title VI) of the Social Security Act are called for. At the same time there is need for more vigorous leadership in the States and localities.

2. Expansion of the Health Program for Mothers and Children

Medical science and the advancement of public health organization have contributed greatly to the health of mothers and children during the past decade. We know how to reduce illness and deaths of mothers in childbirth, how to prevent the deaths of infants, how to promote the sound growth and development of children and protect them against communicable disease. We know, too, that early medical care of children who develop physical defects or illness will be effective in most cases in restoring them to health and full physical activity. This knowledge has been utilized to begin the erection of a framework of maternal and child health services. A comprehensive program is needed to make available to mothers and children in every city and county the health supervision and promotion service that would foster the development of a healthy nation. It includes the provision of a full-time county or district health organization, public health nursing service, and medical service, usually from local practicing physicians, for the conduct of prenatal clinics, child health conferences, school medical examinations accompanied by adequate follow-up work, and hospital and clinic care of the sick. It must be confessed that as yet this program is far from fully developed in many parts of the country.

Since 1936 the Federal Government, through grants-in-aid, has been cooperating with the State health agencies in extending and improving maternal and child health services and with State crippled children's agencies in providing services for the physical restoration of crippled children. Yet the most recent figures reported by the State health officers show that in approximately one-fourth of our counties there is no public-health nursing service, in almost three-fourths of our counties prenatal clinics conducted monthly are not available, while in two-thirds of our counties there are no child health conferences held monthly. In only approximately one-fourth of our counties do we have all three of these types of service. The larger cities have well-developed maternal and child health programs, but many of the small cities and towns have very limited programs. Even where these programs are under way they are frequently too limited in personnel to undertake to reach all of the mothers and children who should benefit from the public program for the promotion of the health of mothers, preschool children, and school children. The war shortage of physicians and public health nurses has seriously curtailed even those programs that were under way when the United States entered the war. It is estimated that more than 50 percent of our children live in places of less than 10,000 population and yet only 2 percent of these places have out-patient clinics to which children can be taken for care; less than 2 percent have a pediatrician for local consultation.

The maternal and child health program is not only limited in the number of areas served and in the numbers of mothers and children reached; the services needed for a well-rounded program are also only partially developed. We have much further to go in the education of mothers in the care of themselves and their preschool children. The development of the nutrition program for children is still in embryonic form. Mental hygiene is still to be effectively woven into our health programs. Only sporadically are medical care services provided for mothers in relation to childbirth and for children when illness or physical defects require medical treatment and hospitalization. Under the State maternal and child health programs a beginning has been made in a few counties in providing medical care and hospitalization for mothers at delivery, and to a lesser extent for sick children in families that cannot obtain such care unaided. In large cities and in some of our smaller cities such medical care is frequently available from public or private funds. But the great need of mothers at maternity and of sick children in families in the lower and middle income groups has not yet been faced and planned for.

The State crippled children's agencies with the aid of Federal funds are providing medical services in clinics for more than 100,000 crippled children each year including services mostly for conditions requiring orthopedic and plastic treatment and, in a few demonstrations, treatment for children suffering with heart disease due to rheumatic fever. Between 40,000 and 50,000 children are given hospital and surgical care each year. This program is capable of very considerable expansion to provide remedial service for more types of physical handicap and to reach more of the crippled children in need of treatment.

There is widespread professional and lay interest in the development of more adequate maternal and child health services throughout the Nation. But this interest has not yet been translated into a willingness to make available the appropriations necessary to attain the objectives sought. The effectiveness of Federal grants in stimulating action in the States and in calling forth State and local expenditures has been demonstrated since the

passage of the Social Security Act. But these funds are still too limited. Larger appropriations for both maternal and child health services and services for crippled children should be made available under Title V of the Social Security Act. And to secure the best results, maternal and child health clinics should be specifically authorized to provide treatment, where necessary, as well as diagnostic and advisory services.

Provision for the health of school children is also still far from adequate. A comprehensive program would include measures for the control of communicable diseases, periodic physical examinations of all children, and follow-up services to ensure that diseases and defects are promptly removed or adequately treated. At the same time the opportunities presented by the educational system itself should be seized to instruct the pupils in those practices which conduce to their physical and mental well-being. These opportunities include, in addition to positive instruction, demonstration, through example, of the importance of safe and healthful surroundings and adequate nutritious meals. These standards are far from being met today.

There are still three States in which no law provides for the examination of school children. Some of the laws in other States are permissive or specify only limited examinations. Although all cities of 100,000 population and over have developed systems of medical inspection of school children, this service is still inadequately developed in the smaller communities and in rural areas. While an increasing percentage of children entering first grade have had a medical examination before entrance, not half of the children and young people of school age are receiving medical examinations; indeed, not 1 high-school student in 10 receives such an examination. Even where examinations are given they are often of a very cursory nature and lacking in educational impressiveness either for the child or his parents. More serious still is the fact that a large proportion of the defects discovered go uncorrected. Follow-up work to ensure the active cooperation of parents is often neglected because of the inadequacy of nursing staffs or lack of appreciation of the vital importance of this aspect of health promotion. Often the treatment required is beyond the family resources. Even in some of our largest cities the facilities for treatment of children at public expense are inadequate, and the extent of such inadequacy increases rapidly as the size of the community decreases.

C. Protection of Factory and Farm Workers against Health Hazards

The risks to the health of the workers of the Nation arising out of industrial or occupational accidents or diseases suggest yet another area in which an investment in preventive programs would yield rich dividends. The United States Public Health Service has pointed out that the prompt adoption throughout industry of already known medical and engineering controls would immediately reduce by 10 percent the time lost due to sickness and accidents of an occupational character.

Yet recognition of the importance of industrial hygiene has been relatively slow. Basic legislation calling for minimum safeguards against the health hazards of production is still inadequate in certain States, and the small body of inspectors cannot bring to light all cases of noncompliance. By 1941 only 32 States and 4 large cities had industrial hygiene units; in many of these States such services as existed were meagre, and the units suffered from lack of personnel and equipment. Despite the assistance which the Federal Government has given to the States through assignment of personnel since the outbreak of the war, it has been impossible for the industrial hygiene units to contact more than about 2 million of the more than 50 million workers of the country. Moreover, the record shows that a substantial proportion of the suggestions offered are not acted upon. Industrial hygiene programs have been developed by many large corporations, but others still fail to appreciate their importance, while among the small firms they are the exception rather than the rule.

A program for the protection of the Nation's workers from occupational hazards must necessarily be many-sided in character. It calls for continuing medical research into the causes of occupational diseases and into methods of treatment and of reducing their incidence. It requires engineering studies to discover ways and means of eliminating accidents and assuring working conditions that are conducive to good health. It requires legislation to enforce minimum healthful physical working conditions, and adequate and well-trained inspection staffs. There is need finally for a high degree of cooperation on the part of both employers and workers to apply effectively the knowledge that research makes available.

D. More Widespread Appreciation of the Importance of Health to the Individual and the Nation

The need for educating the people to a due appreciation of the importance of health has long been evident to professional workers. There is a widespread reluctance to seek medical care except for acute conditions, and not all of this reluctance can be explained by financial pressures. More adequate health facilities and a wider dissemination of knowledge of their character and availability will lead to an enhancement of health

standards only if each individual will accept the responsibility for taking all steps necessary to maintain and improve his own physical fitness. More attention must be paid through health education in such strategic institutions as the schools and the factories to disseminating an understanding of the importance of health and of the responsibilities of the individual to adopt healthful practices.

At the same time the Nation as a whole must satisfy itself that adequate resources are available for continued research. A substantial share of the financial support of current medical and scientific research is derived from private endowments. The probability that the war may adversely affect this source of income is a cause of real concern. If there is to be a progressive expansion of the frontiers of control over health hazards, continued support of basic research from public and private funds must be assured.

II. Assurance of Proper Nutrition for All Our People

In the last two decades there have been great advances in the science of nutrition, but much still needs to be done if the Nation is to reap the full advantage of the scientific knowledge at its disposal. The growing recognition of the importance of proper nutrition to the welfare of the people led in 1941 to the convening of a National Nutrition Conference attended by some 900 delegates representing scientific workers and the medical profession, as well as agriculture, labor, industry, and consumer groups. The facts presented to the conference indicated that undernourishment is widespread among the people of this country and is serious enough to be a cause of acute concern among that third of the population living at or below the subsistence level. At the same time there was a wide measure of agreement as to the steps which should be taken to raise the nutritional standards of the Nation. Among the more important directions in which action is called for are the following:

1. Renewed efforts to assure to every family the minimum income necessary to purchase adequate diets. The basic income of a substantial section of the American population is too low to permit the purchase of adequate diets, however skillfully and scientifically expended. The proposals which have been made in other sections of this report for enhancing the national income could thus contribute materially to higher nutritional standards. Pending attainment of this objective, there are some interim measures which, if suitably safeguarded, might remedy some of the worst deficiencies. Free school lunches would at least assure that the worst effects of malnutrition would not be perpetuated in future generations. The stamp plan has made a real contribution to the improvement of the diets of recipients of public aid. It could with advantage be made available to other groups who are not dependent on public aid but whose standard of living is no higher. If any such extension is contemplated, careful attention must be paid to the selection of the commodities whose production is to be thus encouraged. The decision as to what products shall be treated as surpluses, and thus available for distribution through extension of the stamp plan, must in the future be more closely related to scientically determined nutritional deficiencies.

2. Continued support for public and private agencies engaged in the dissemination of sound nutritional practices and principles. Not all of the malnutrition is due to inadequacy of incomes. Even some people with the means to eat well live on diets lacking in essential elements. Both private and commercial methods of processing and preparing foods fail to reflect contemporary nutritional knowledge. Such agencies as the Committee on Foods and Nutrition of the National Research Council and the Federal Interdepartmental Nutrition Coordinating Committee are contributing materially to the education of consumers and producers. This work must be expanded. Special attention must be paid to enlisting the cooperation of the foods industries and to demonstration work in the schools, the factories, and farming areas.

3. More orderly and economical arrangements for the production and physical distribution of the basic foods essential to health. If domestic food needs are to be fully met, changes will be called for in the composition of our agricultural output. More emphasis must be placed upon the production of animal proteins, and fruits and vegetables rich in vitamin content. Marketing facilities, especially in thickly settled urban areas, call for redevelopment and more careful planning in order to cut distribution costs.

4. Encouragement of the production of foodstuffs for home use on the part of low-income or one-crop farmers. At the time of the 1940 census, only 79 percent of the Nation's 6 million farms had gardens. There is need for an intensive educational campaign, coupled with measures for storage of foodstuffs through home preservation and through quick-freezing facilities.

III. Assurance of Adequate Health and Medical Care for All

Adequate medical care, including measures for rehabilitation on a basis that is consistent with the self-respect of the recipient, is today impeded by inadequacy of facilities and financial restrictions. In 1941 there were in the United States 1,324,381 beds in 6,358

registered hospitals, distributed as follows: 603,872 beds in general and allied special hospitals; 638,144 in nervous and mental institutions; and 82,365 in tuberculosis sanatoria.

The 600,000 beds for general medical care represent a ratio of 4.6 beds per 1,000 population, a figure slightly above the generally accepted standard for adequacy, 4.5 beds per 1,000 population. However, this over-all figure conceals a tremendous variation in facilities as between regions and States; in certain States the ratio is nearly 6 beds per 1,000 people, in others as low as 2. Within the States local variations are also great. Many of the Southern States are far below the mark in their hospital facilities. On the basis of a ratio of only 2 beds per 1,000 population, the United States Public Health Service estimated in 1940 that at least 270 new hospitals with a combined capacity of 15,500 beds would be required to provide minimal general hospital facilities for rural areas. The most recent careful estimates of the additional facilities required for adequate care of the tuberculous and mentally diseased, made by the Technical Committee on Medical Care in 1938, indicated that facilities for the tuberculous were deficient by 50,000 beds, and those for the mentally ill, by 130,000 beds.

The 1935 Business Census of Hospitals verified the fact that the existence of facilities depends in great measure upon the level of wealth, as measured by per capita income. It was found that, regardless of the type of hospital, the number of beds per unit of population was roughly proportionate to the income of the area. Bed facilities in general and allied special hospitals, for example, were almost two and a half times as numerous in the wealthiest quarter of our States as in the poorest quarter. The need for Federal aid is manifest if the problem is to be met in the less well-to-do areas.

There are also great disparities in the availability of medical personnel in various parts of the country. Before the rapid changes resulting from the war, the national ratio of physicians to population was about 1 to 800, ranging in individual States from 1 to 500, to 1 to 1,400. Similar variations exist in the distribution of dentists and nurses. A public health nurse, for example, takes care of an average of over 11,000 people in one State as compared with less than 4,000 in another, while there are nearly five times as many dentists per unit of population in one State as in another State less than 200 miles distant. As in the case of hospitals, these regional variations have a close correlation with per capita income, and the problem is intensified because the areas with inadequate hospital and clinical facilities do not attract the more progressive or younger physician. Two problems call for immediate attention. The Nation must satisfy itself that the total numbers of medical personnel after the war will be adequate for the expanded health services that are indicated. And steps must be taken to see that medical personnel are distributed over the country more nearly in proportion to need.

Even with more nearly adequate facilities, adequate medical care for all will not be assured until the financial problem is solved. The vast majority of the population desire to contribute toward the cost of the medical care they receive. But the ability of many to do so is impeded by the low level of private incomes and the high and unpredictable costs of illness. Hitherto the problem has been tackled by adjustments between the individual physician and patient, by private insurance, and by free medical care for those who are destitute. All these measures have important shortcomings.

Individual adjustment between patient and physician is unsatisfactory to the patient, for it introduces an extraneous element into the relationship of patient and doctor and is so distasteful to many that they refrain from seeking the care they need. It is unsatisfactory to the doctor, who is not trained as a medical social worker. Furthermore, the incidence of this free or reduced-fee service does not fall on all doctors alike because many who practice in the poorer areas have little opportunity to compensate for these services by higher charges to richer patients. In the future this source of compensation may be even more drastically reduced as the higher income brackets feel the full force of heavier taxation.

Private insurance has made a real contribution and is growing in popularity, as the phenomenally rapid growth of hospitalization insurance has demonstrated. But as a solution of the basic problem it, too, has shortcomings. It has been applied only sparingly and with limited success to medical care, as apart from hospitalization. Insurance has also hitherto failed to appeal widely to the lower income groups, and it seems doubtful whether those who have difficulty in meeting the minimum necessities of decent maintenance can be expected voluntarily to budget for medical costs.

Public medical care for the needy varies widely in availability and quality in different parts of the country. There is need for better professional supervision, closer cooperation between the various agencies concerned, more rational administrative organization and procedures, and the allocation of more adequate funds to this public welfare service.

The problem presented by the financial obstacles to assurance of adequate medical care for all is one of the most important in the entire field of public health. Its solution will call for the closest cooperation between the medical profession and government. It will re-

quire, too, the courage to face economic realities and to explore not only the potentialities of expansion of publicly provided medical care but also the feasibility of methods such as social insurance which have successfully operated elsewhere.

IV. Economical and Efficient Organization of Health Services

If the health of the Nation is to be raised to the level which existing knowledge now makes possible, it is evident that more of our resources must be invested in health activities. It has already been suggested that we shall need more doctors, dentists, nurses, and laboratory and technical workers. More of our resources must be invested in the training of these people, so that the gains of new knowledge can be disseminated throughout these professions as rapidly as possible. Attainment of our objective will make additional demands upon the construction industry, for hospitals in many parts of the country, for well-equipped clinics and health centers, and for more adequate and convenient premises to house the agencies concerned with public health.

This prospect should occasion no consternation. During recent decades the productivity of our labor has increased in a spectacular manner. Thanks to our inventive capacity and the growth of our capital resources, we know now that we can produce any given quantity of goods and services with far less labor than was called for 30, 20, or even 10 years ago. Our increased power to produce has been put to many uses, although, as the serious unemployment of the last decade shows, the country has not yet succeeded in so organizing its economic system as to make full use of our increased productivity. Part of this new potential wealth has taken the form of more goods, more both in amount and variety. But as our wants for the physical prerequisites of the good life have been more adequately satisfied, new wants have been recognized, or even created by the complexity of modern conditions of living. To an increasing degree we recognize needs which can be satisfied only by the rendering of services. It is not surprising, therefore, that there has been a continuous growth in the relative numbers of workers in service industries.

These facts suggest that plans which look toward raising the level of health of our people make sense not only from the human or social, but also from the economic, point of view. Here will be a great opportunity for the productive absorption of some of the labor which is no longer needed for the production of the bare physical essentials of living.

Expansion of these social services will also enable the Nation to take full advantage of the resources it has invested in the education of the people. The proportion of young people completing high school and college courses has steadily increased in recent years, but many of these young people with well-trained minds and great natural capacities find little opportunity to employ their skills on leaving high school or college. A great expansion of the many-sided health services of the Nation, embracing research, public health activities, medical care, and hospitalization, would not only contribute to the fuller and more effective employment of the Nation's labor power, but would also enable the young people themselves to make more constructive and satisfying use of the knowledge and training they have received.

At the same time the Nation is entitled to demand that the physical and human resources devoted to health services shall be utilized in an economical manner. There is a waste of resources when there is a high proportion of empty beds in well-equipped and expensive hospitals. Waste is involved if the time of medical personnel who have undergone a long and costly training is not fully occupied because the people who need their services cannot afford to pay for them, or if it is uneconomically used, as when highly trained persons perform functions which could well be carried out by less specialized or skilled personnel. Physical resources are being wastefully used when a profession that increasingly requires more technical equipment fails to take full advantage of the economies of group practice.

The importance of making the most effective use of the national resources devoted to health services is being forcibly brought home to the Nation during the war. The shortages due to the drafting of medical personnel for war service and the scarcities of essential health supplies have been intensified by the increasing need for medical care for workers who are employed in war industries in areas previously lacking adequate medical personnel and equipment, and who are subjected to the increased strain of longer hours, more intensive work, and new and more dangerous methods of production. All these developments have widened the gap between the need for health services and the available supply. In their attempts to grapple with this situation, communities will have to explore new methods of providing medical care and devices for making the most economical and effective use of such facilities and personnel as are available. These gains must not be abandoned after the war. For here as elsewhere the war has merely thrown into high relief the extent of our peacetime failure to solve basic problems.

Progress toward a more effective and economical organization of health services in the post-war period,

as today, will therefore call for action on several fronts. Among the steps at present indicated are the following:

1. Better coordination of the medical and health facilities and agencies in each community, so that all available resources may be tapped for the preservation of the health of the people.

2. Increased use of clinics, health centers, and group practice, in order that contemporary methods of organizing the supply of medical care may reflect technological developments and the vast expansion of medical knowledge.

3. Arrangements for the supply of medical care which will free the doctor or dentist from the necessity of spending time upon functions for which he is not especially trained or which could more economically be performed by less highly trained personnel, to the end that he may increasingly devote his attention to ways and means of improving the quality of medical care.

IX. EQUAL ACCESS TO EDUCATION[1]

Our public schools originated in a rural economy. Because transportation facilities were poor, they needed to be located within walking distance of the home. Today over 70 percent of the children of school age reside in cities, towns, or villages, and most of the others live on farms where roads are suitable for transportation to consolidated schools.

The increased complexity of modern life requires education broader in scope and for a longer period of years than was needed when our economy was primarily rural. Change in the typical work situation from family employment to paid work away from home means that work experience is no longer available in connection with the home life of most families. Yet work experience is needed as a part of schooling, both because work habits need to be implanted before youth become adults, and in order to assist youth in discovering their interests and capabilities through experience in a variety of types of work. The greatest need for work experience as a part of schooling is at the level of the high school and junior college, because youth in that age group are in particular need of guidance in the selection of a school program and in the choice of a vocation.

Most individuals feel the need to express themselves through some form of creative activity, but the shift from hand work to machine production has resulted in decreased opportunity for creative expression as an aspect of the work of many persons. If people were adequately trained to utilize their leisure in a creative way, this need could be met at least in part through activities carried on during periods of leisure. For this reason, an important place should be provided in the school program for training in the creative use of leisure.

There are additional aspects of successful living with which the school must concern itself to a greater extent than formerly, either because of their increased importance or because of the decline in other opportunities for their cultivation. A growing body of knowledge concerning healthful living can best be imparted in the school. Modern life also demands special attention in the school to problems of safety. The school has much to contribute in imparting attitudes that make for successful association with other persons, particularly in home and family life. It also has an obligation to provide an understanding of the requirements of national security in all its forms, and adequate preparation for participation in national defense. Citizenship in the broadest sense should be cultivated in the schools.

In addition to the social changes that have resulted in expanded areas of education, another important factor that has made educational changes necessary is the acquisition of new and improved tools of teaching. The radio, visual aids, sound recordings, and modern laboratory, shop, and library equipment have made possible greatly increased effectiveness in methods of teaching.

The past four decades have seen the emergence of more knowledge and a better understanding of the way human beings learn. As a result of this increased knowledge and understanding, teaching methods must be modified and improved.

Expanded areas of education, improved tools of teaching, and a better understanding of the learning process all demand sweeping changes in the details of classroom operation as well as in the scope of the educational program. They have opened up a period of usefulness for the schools which goes far beyond the practice (if not the conception) of earlier days. The time is ripe for securing the benefits of this fruitful period of adjustment. We have now, as never before, a conception of the national strengths, shortcomings, and strains to which public education is intimately related.

It is clear that schooling should begin early in the life of the child and continue for all at least to adulthood. From the preschool period through elementary and high school, education must be concerned with the tools of learning and communication, such as reading, writing, arithmetic, and the use of language—skills which are needed in all vocations. Equally important concerns of education at these levels are the day-to-day and year-to-year growth in understanding of the physical, social, and economic world in which we live, and the continuous growth in the ability of children and youth to master their own powers and to exercise them with due regard to the rights of others. The school must be a place for growth in the mastery of the tools of learning, in the arts of communication, in basic knowledge and understanding, in sound thinking, in civic interest, and in vocational competence. To achieve these ends, it must be rich within itself in curriculum and instructional materials and in addition, must utilize its community as a learning laboratory.

Experience has shown that the task of operating such schools is one that requires a combination of abilities, personal traits, and broad understanding found only in able and well educated persons. The professional

[1] Prepared under the direction of Assistant Director Thomas C. Blaisdell, by Dr. Floyd W. Reeves, assisted by D. L. Harley, of the Board's staff.

staff must not only observe and guide the development of children but also assist the community to make wise decisions on public policy with respect to education. The staff cannot for any long period raise the level of the school much higher than the community wants it to rise.

In a post-war period of full employment, with the national income that full employment will bring, this Nation can afford to provide the kind and quality of education needed by children, youth, and adults, and to give equal access to such education to all who need it or desire it. The recommendations presented below, if followed, would provide equal access to a justifiable minimum education in the post-war period.

1. *That equal access to elementary and high-school education be assured all children and youth.*—The inadequacy of our elementary school provisions in the recent past has been demonstrated by the fact that 20 percent of the men of military age are found to have had less than a fourth-grade education. As late as 1940, an estimated three-quarters of a million children of elementary-school age were not in school. With few exceptions, all of the 18,000,000 children of this age group should be in school. At least 90 percent of the 9,750,000 youth of appropriate age should be retained in high school, with at least 80 percent remaining through graduation. The 1940 high-school enrollment was only a little more than 7,000,000. An increase of almost 1,700,000 high-school pupils would thus be necessary to reach the desired goal.

Many children who ought to be in school cannot attend because of low family incomes. Either their labor is needed to supplement their parents' earnings or their families cannot afford to purchase the clothes and school supplies and bear the other incidental expenses involved in sending children to school. The economic barrier to continuation in school should be eliminated. For youth in the upper years of high school, aid should be made available through scholarships or paid work opportunities. For children below the age of 15 or 16, the economic handicap should be met by means of family allowances through social-service agencies, rather than by direct aid to pupils.

In extending and raising the level of education, special care should be taken to insure equal opportunity to large groups of children and youth who are particularly disadvantaged. These include children and youth in rural areas, Negroes and certain other minority groups, and in general children and youth in families with low incomes.

2. *That services for young children, such as nursery schools and kindergartens, be made generally available in urban areas and insofar as possible in those rural areas where the need is greatest.*—Most children between the ages of 3 and 5, inclusive, can benefit greatly from preschool education of the type provided in the better nursery schools and kindergartens. The number of children who should be enrolled in school at levels below the first grade depends upon the adequacy of the home environment, the accessibility of schools, and transportation facilities. Provision should be made for some form of organized preschool education for most 5-year-old children. At least half of all children between the ages of 3 and 5, inclusive, should be receiving preschool education. In 1940 about 650,000 children in this age group were receiving such education. The 1940 enrollments at these levels will need to be increased by approximately 2,500,000 to attain the desired goal.

3. *That equal access to general and specialized education be made available to all youth of college and university age, according to their abilities and the needs of society.*—Fewer than half of the Nation's youth who are able to do acceptable college work now continue their education beyond high school. In the majority of instances the chief difficulty appears to be an economic one. In the postwar period no youth should be barred by economic circumstances from carrying his education as far as he profitably can. The attainment of this objective will require the establishment of many new junior colleges and technical institutions in order that the first years of post-high-school training may be more readily accessible. It will also involve a large increase in the amount of student aid at all levels, because many more students will need assistance and in many instances the aid needed by the individual will be larger than is now customary. This aid may take the form of grants, loans, and work opportunities, but it should be available in whatever amount needed, when necessary up to the full cost of attending college.

The extent of the increase in college attendance that will best serve the needs of society in the post-war period cannot be precisely determined. However, it is probably a reasonable working hypothesis to say that 40 percent of all youth of junior-college age (50 percent of all high-school graduates when 80 percent of all youth of high school age graduate) should be in college or technical institute. This would involve an increase of 130 percent over the 1940 enrollment in the first 2 years beyond high school, which was approximately 870,000. Beyond the second year of college approximately 687,000 were enrolled in 1940. It appears reasonable to assume that the best interests of society will require an expansion in this enrollment of about 25 percent, giving approximately 860,000 beyond the second year of college. If universities and degree-granting colleges expand their lower divisions in the proportion recommended as appropriate for their upper divisions and graduate and professional schools (25 percent), then it will be neces-

sary for junior colleges and 2-year technical institutes to increase their 1940 regular enrollments of 150,000 by more than 600 percent in order to accommodate the students whose inclusion at this level has been recommended.

4. *That adequate provision be made for the part-time education of adults through expansion of services such as correspondence and class study, forums, educational broadcasting, and libraries and museums.*—Both general and vocational education should be available to all adults and out-of-school youth who wish to participate and who are qualified to benefit from additional education. Adult education should be provided at all levels, from literacy education through education at college and university levels. Public schools, colleges, universities, and other public agencies should provide this program to the extent that the services offered by private agencies and institutions fail to meet the need. It is particularly important that out-of-school youth on public work programs, such as those which have been administered during the past few years by the National Youth Administration and the Civilian Conservation Corps, receive training on the job and related education. No qualified out-of-school youth or adult should be barred by economic circumstances from participation in a needed program of adult education. This means that a large part of adult education must be either free or available at low cost.

Public libraries deserve support that will enable them adequately to fulfill their functions as major instruments of adult education. Thirty-five million Americans, most of whom reside in rural areas, have no library service. Those to whom libraries are available receive service costing, on the average, little more than a third of the $1.50 per capita estimated to be required to maintain a reasonably good library.

Correspondence study, forums, and educational broadcasting, both as part of the extension services of schools and colleges and under other auspices, should be expanded, along with all other forms of adult education.

5. *That educational provisions for children who for any reason need special types of instruction be greatly expanded.*—Among children who often need special instruction are: Gifted children; those physically or mentally handicapped or socially maladjusted; children with language difficulties; in short, all children who for any reason cannot make satisfactory progress under a program designed for the majority. These children require specially trained teachers and individual attention adapted to the nature of their handicap.

Every school district should make provision for children who need individual instruction. Ordinarily such provision can best be made through special schools or classes. Where districts are not large enough to maintain these provisions independently, they should join with other districts in providing adequate education for exceptional children.

Residential schools for the blind, deaf, delinquent, and mentally deficient perform an important function but at present are one of the weakest parts of the educational program. They are often overcrowded, understaffed, and inadequately supported. The services and facilities of such institutions should be expanded, improved, and fully integrated with the state educational program.

6. *That the quality of education at all levels and for all persons be made adequate to meet the needs of a democratic nation.*—Educational programs must be modified to provide adequate education for health and safety, vocations, leisure, home and family living, national security, and citizenship. Community resources should be more fully utilized, especially in social and economic education and citizenship education. Arrangements should be made for children and youth to participate actively in community studies and community-action programs. Education at all levels should stress the importance of cooperative endeavor and provide experience in its practice. At the high-school level, in particular, the program needs to be fundamentally reorganized to adapt it to the needs and interests of adolescents.

The teaching, supervisory, and administrative staffs of the public schools should be selected and trained according to improved standards and procedures. Their salaries and conditions of tenure ought to be such that teaching may become a career service.

Schools at all levels need equipment appropriate to the diversified functions they perform. Laboratories, shops, and libraries should all be maintained at a high standard.

7. *That men and women demobilized from the armed forces and war industries be given opportunity to secure necessary retraining for civilian activities, or to continue their education in cases where it was interrupted by the war.*—When hostilities cease, many million men and women who have been members of the armed services or workers in war industries will need to find employment in civilian activities, many of which have little or no relationship to the work they have been doing. Among these persons will be many who have never worked in a civilian occupation. Undoubtedly, several million of them will need either pre-employment training or retraining.

The training program will need to be as diversified as the present program for the training of workers in war industries. It will include full-time employment training for those preparing to enter new occupations; and training on the job, with related training provided

by schools, colleges, and universities, for those who are employed and need training to increase their effectiveness in their present work or to prepare them for advancement.

Many of those demobilized will be youth whose education was interrupted by the war. For them a full-time program of general education, or of professional or other vocational education, at the level of the high school, college, or university, should be available. Others among those demobilized will need a part-time program of general adult education.

No one can now foresee how many men and women serving in the armed forces or working in war industries will become injured or otherwise disabled to the degree that retraining will be necessary as a part of rehabilitation. Education should be prepared to provide whatever training proves to be needed for both war disabled and other disabled persons.

8. *That camp facilities be made available for all youth above the lower elementary grades, with work experience provided as a part of camp life.*—At the present time the number of children for whom camp facilities are available is relatively small. A limited number, whose parents can afford to pay tuition, attend private camps maintained either for profit, or on a nonprofit basis by organizations such as the Boy Scouts, the Girl Scouts, the Y. M. C. A., or the Y. W. C. A. A few other children whose families cannot afford to pay any of the costs of camping are provided with an opportunity to spend brief periods in free camps maintained by welfare agencies. But most children who need the experience of camp life never get it.

The educational values of periods of supervised group living, particularly when conducted in close contact with nature, are well recognized. Organized camping under school auspices is one of the best means of achieving the desirable extension of the school term beyond the conventional 9 months.

The expense of a camp program need not be prohibitive. Much of the construction of camp facilities is work well suited to youth of high-school age, and such facilities can be created inexpensively as a part of a work-experience educational program. Older youth can also obtain valuable work experience by acting as camp counselors. Furthermore, in some parts of the country camp facilities can be used the year round, thus decreasing the unit cost. All things considered, the cost of maintaining a child in camp can compare favorably with the cost of maintaining him at home.

Provision is needed for a considerable portion of youth to spend a period in work camps, where they can obtain much of the benefit of organized camping of the more traditional pattern and in addition the specialized advantages of supervised work experience.

9. *That meals at school, and supervised work and play projects and other services before and after school hours, be made available to all children who need them.*—Where adequate home care is not provided for school children, their school day should be lengthened. Facilities for before- and after-school care are especially necessary for children from broken homes, for children of working mothers, and for all other children who are not adequately fed and cared for outside of school. Such facilities should be available to the extent that the moral, physical, and mental welfare of the children may require. School lunches, serving appropriately selected food for the double purpose of providing a nutritious meal and instilling acceptable health habits, should be available to all children.

10. *That an extensive program of building construction and repair be undertaken to meet the needs of education at all levels.*—An extensive program of school-plant construction and repair is necessary in order that the large accumulated deficiency in new school construction may be removed, and that facilities may be provided for an increased enrollment. From information available it appears probable that half of the school children below college grade are now housed in school buildings that are either obsolete or poorly located. These pupils should be rehoused as rapidly as possible in structures adapted to modern educational techniques and community needs. At the same time, additional school buildings becoming obsolete should be promptly replaced in order that a recurrence of the present deficiency may be prevented. New school construction should be at the minimum of expense consistent with adequacy and safety. Structures likely to outlast the educational theories they exemplify are to be avoided.

11. *That school districts be reorganized to enlarge the local administrative unit and the tax base.*—Redistricting of school units in all States is the first essential to the achievement of equality of educational opportunity.

There are more than 115,000 local school districts in the United States. These districts vary in population from more than 7,000,000 in New York City to fewer than 50 in many rural districts. Most rural school districts are so small and have such meager taxable resources that it is impossible for them to maintain a high school. Even their elementary school cannot be adequately financed. Broadening the tax base through enlarging the local unit of financial support will result in increased ability to support education from local sources, greater equality in financial burden among districts, and better administration and supervision of the school program.

It would be desirable that wherever possible the local

unit should be large enough to have a school enrollment at the junior-college level adequate for an economical educational program with a broadly diversified curriculum. The administrative unit should be of sufficient size to permit an economical high school with an enrollment of at least 400 pupils, except in most sparsely populated areas.

Consolidation of school districts does not necessarily mean consolidation of all the schools within the districts. Buildings in good repair and suitably located may continue to be used, in some cases even though they are only one-room schools. In general, the principle that the smaller children should be sent to school as close to home as possible is to be respected.

12. *That dormitories and transportation services for pupils in rural areas are greatly expanded.*—Well developed transportation facilities are essential to the establishment of schools of adequate size in rural areas. When further consolidation of schools takes place, additional children will need to be transported. In some instances it will be necessary to maintain dormitories for high-school pupils who would otherwise have to be transported excessive distances. Special financial aid to local school districts may be needed for these purposes.

13. *That the services of the United States Office of Education and State departments of education be expanded and developed to provide adequate research facilities and educational leadership to the Nation.*—The staffs and services of all but a few of the State departments of education need to be greatly expanded in number and improved in quality. Adequate Statewide educational programs are necessary if a minimum education of acceptable quality is to be assured every child, youth, and adult who needs and desires it, in every State. Only a few favored States are now equipped to supply such services as research and experimentation, administrative leadership and guidance, adequately supervised instruction, and similar services essential to an efficient State school system. State departments of education should be given the support that will enable them to employ a staff of outstanding educators, adequate in number to accomplish the purposes for which these agencies exist.

For the same reasons that State departments of education should be staffed to supply adequate leadership to local school districts, the United States Office of Education should provide parallel service to the States and to the Nation. It has never had the financial support to provide an adequate staff to enable it to function effectively in this capacity. In the future, the Office of Education, working in cooperation with educational institutions and the State departments of education, should become the major instrument of educational research and planning. Its services should be expanded and improved, and it should make generally available the best in educational knowledge and leadership.

14. *That adequate funds be made available by the local, State, and Federal governments to assure the carrying out of the recommendations presented above.*—In 1940 the current expenditure for elementary schools (including nursery schools and kindergartens), high schools, higher institutions, public libraries, and aid to students, totaled, in round numbers, 2,817 million dollars. The capital outlay for education, including public libraries, amounted to 382 million dollars.

The proportion of educational income derived from government at different levels, and from private sources, varies widely from State to State and from community to community. For the Nation as a whole, the sources of the 1938 educational income, including private schools and public libraries but excluding student aid, were approximately as follows: 3 percent from Federal sources, 26 percent from State sources, 53 percent from local sources, and 18 percent from private sources.

The support of education is now inadequate to provide equal access to minimum justifiable education. A number of States, and many thousands of school districts, with tax burdens for the support of education which are much greater than the average for the Nation, receive educational revenues which are so small that it is impossible for them to maintain an effective educational program. Of the 12 States making the greatest effort to support education in 1940, not one is among the 12 with the highest current expenditure per pupil.

In 1940, 9 States spent for education less than $50 per pupil enrolled in their schools, although 9 other States spent $100 or more per pupil. Mississippi spent only $25 per pupil, less than one-third the average for the Nation, and less than one-fifth the amount spent in New York. The average salary for all public elementary and secondary school teachers, principals, and supervisors ranged from about $560 in Mississippi to more than $2,600 in New York. The average salary was less than $800 in 6 States, but more than $1,600 in 11 states. The value of school property per pupil enrolled ranged from only $80 in Tennessee to more than $525 in New York. In 7 States it was more than $400 per pupil, while in 4 States it was less than $100 per pupil.

The Nation is now spending less than 50 percent of the amount needed to provide a justifiable minimum educational program. The outlay for higher education is about on the same level. Table I represents in round numbers the current expenditures for education in 1940, and the estimated current expenditures that would be necessary to provide a justifiable minimum education in the post-war period.

To meet the educational needs of the post-war period,

TABLE I.—*Current expenditures for education in the United States in 1940, and estimated justifiable minimum annual expenditures in the post-war period*

[Millions of dollars—1940 purchasing power]

	Expenditure	Post-war period
Preschool, elementary school, and high school	$2,158	$3,900
Junior College	26	400
College, university, and professional and technical school	460	1,000
Adult education provided by schools and higher institutions	57	300
Student aid	66	300
Public Library	50	200
Total	2,817	6,100

NOTE.—It is not now possible to foresee when the educational program suggested might begin to operate. In order to have a basis for estimating future expenditures that might be readily understood, the estimated justifiable minimum annual expenditures in the post-war period have been computed on census data for the year 1940. It is recognized that the number of children in each age group varies from year to year. For example, from 1940 to 1945, the number of children of preschool age will increase by several hundred thousand, those of elementary school age will decrease by about 1,000,000, those of high school age will decrease by about 650,000 while the number of youth of college age will change but little. By 1950 there will be fewer youth of both high school and college age than in 1945, but it appears probable that there will be more children of elementary school age. Because the number of children or youth in some age groups will increase during the same years when the number in other age groups will decrease, the total number of children and youth to be educated will vary much less from year to year than the number to be educated in any single age group.

large expenditures will also be necessary for capital outlay. Several thousand new school and college buildings will be needed to house the children and youth who should be in school but are not now. Likewise, several thousand additional new school buildings will be needed to replace those now obsolete (estimated at 50 percent of all elementary and high-school buildings now in use) and those which become obsolete during the period of reconstruction. Many new public libraries will be needed.

The annual expenditure for capital outlay will vary according to the length of the period over which past deficiencies in the building programs are to be remedied. Table II presents in round numbers the capital outlay for education in 1940, and the estimated annual capital outlay that would be necessary to provide buildings, equipment, and sites for a justifiable minimum educational program.

During the years immediately following the war it does not appear probable that the total revenue available for education from State and local sources combined can be greatly increased, although many States can and should increase the school revenue of their

TABLE II.—*Capital outlay for education in the United States in 1940, and estimated justifiable minimum annual capital outlay in the post-war period*[1]

[Millions of dollars 1940 purchasing power]

	1940 expenditures	Annual capital outlay in post-war period necessary to eliminate deficiencies during a—		
		20-year period	10-year period	5-year period
Preschool, elemeutary school and high school	$295	$580	$1,000	$1,860
Junior college	7	65	125	250
College, university, and professional and technical school	77	85	120	190
Public library	3	25	40	80
	382	755	1,285	2,380

[1] See footnote, table 1

State governments and decrease the school revenue of their local governments in order to reduce the heavy tax burden now resting on local government. It also appears improbable that any great increase will occur in the nongovernmental funds available for education. It is therefore evident that most of the increase in expenditures for education in the post-war period must be financed almost if not entirely by Federal funds.

15. *That inequality of the tax burden for education within and among the States be reduced through the distribution of State and Federal funds on the basis of need.*—Measured in terms of the number of children and youth to be educated and the ability to raise school revenue, some States are six or seven times as able as others to support education. Within the States the discrepancies among school districts are even greater. Instances exist of adjacent school districts that vary a hundredfold in their ability to support education. Not even an approximate approach to equality of educational opportunity can be achieved until these great disparities among and within States are materially reduced. Most State plans for equalization should be revised to distribute State funds more nearly on the basis of need. The only agency that can remedy the inequality among the States in the tax burden for education is the Federal Government. It should accept this role.

Federal funds should be used primarily to improve educational opportunity in States where the need is greatest. Technical procedures of measurement will be necessary in the computation of need. Need is determined in large part by the number of persons to be educated and the financial ability of the States to raise revenue. Among the factors to be considered are the proportion of children, youth, and adults actually in school in the various States at any particular time, the percentage of the population in the various age groups,

and the sparsity of population. Because all of these factors change over a period of time, it would appear unwise to include in legislation any exact formula for the distribution of Federal funds.

Authority for the allocation of grants might well be vested either in a special board established for this purpose, or in the United States Commissioner of Education with the approval of the Federal Security Administrator. The agency to which this authority is granted should be required to allocate the funds among the States annually in accordance with their financial need. It should develop and use an objective formula based upon number of children of school age as estimated by the Bureau of the Census, the financial ability of the States as calculated by an appropriate Federal agency, possibly the Treasury, and such other factors as may be relevant. This plan would closely limit the discretion of the agency having authority to allocate the funds, in that such agency would have no discretion to determine the allotment of any State except through the application of a formula of specified type, which would apply uniformly to all the States.

X. EQUAL ACCESS TO ECONOMIC SECURITY[1]

The constructive measures which have been outlined in other sections of this report would undoubtedly diminish the need for special programs to assure minimum security for all our people wherever they reside and to maintain the social stability and values threatened when people lack jobs or income. Yet on two counts we cannot afford to neglect the task of strengthening and improving our social-security and public-aid programs. First, because at any given time we may not completely attain our objective of ensuring full employment, and second, because even full employment would not entirely eliminate the need for socially provided income. The old, the very young, and the sick and disabled must be assured basic income, even though they are unable to earn.

In the 10 years preceding the war the country had equipped itself with a series of measures which marked very real progress toward the goal of ensuring freedom from want and the right to work usefully and creatively through the productive years, but the task was far from completed.

Too little emphasis was placed upon preventive as against palliative measures. Public aid was not equally available to all needy people, regardless of their place of residence or the cause of their need. The level of living allowed to those dependent upon socially provided income was for the vast majority of programs extremely low and, for some groups or for all persons in some areas, was shocking in a country of such great potential wealth.

Public work was available for only a fraction of the unemployed. Although through the social insurance measures an increasing proportion of the unemployed or needy population was receiving income as a matter of right, the majority of the dependent group could receive aid only under conditions which certainly were not calculated to enhance self-respect and were often highly destructive of it. The special programs were not in all cases well adapted to meet the supposed needs of the group for whom they had been devised, nor were they available to all persons whose characteristics would suggest they were in need of the measures in question. Appropriations for the various programs were often inadequate or discontinuous and poorly integrated with other fiscal and economic policies. Finally, the administrative structure was cumbersome to a degree that often interfered with attainment of the objectives of public policy.

Fortunately, as a result of the experience we have gained, the country is in an excellent position to move ahead to realize the minimum objectives of freedom from want and the right to work. Certain specific steps could immediately be taken to improve and round out the system of protection against loss of income or jobs so that we would be prepared for any emergencies which may confront us in the post-war world.

I. Implementation of the Right to Work

The experience of the past 10 years has demonstrated that the only satisfactory way to meet the needs created by unemployment is the provision of work. Yet, despite the unprecedented development of public work programs since 1935, the Nation never succeeded in giving work to more than half of the unemployed. Indeed, it had not even attained the stated and more limited objective of providing work for those in need. Furthermore, there was considerable confusion as to the objectives of the various work programs currently in operation, and consequently as to the types of persons who should be employed on each. The PWA, the WPA, and the local work programs were all characterized by differing conditions of remuneration and hours of work, but these variations failed to reflect corresponding differences in the character of the work undertaken, in the standards of performance demanded, and in the types of workers employed by each.

The major work program, the WPA, was in many respects ill designed to attain the basic objectives of public provision of work. Its restriction to needy workers limited the contribution it could make to the maintenance of morale, for access to the program involved the passage of a test of need administered by the local relief agencies, and continuous employment was prevented by the 18-months rule which threw the worker back into a demoralizing state of inactivity and uncertainty until he could once more qualify as a needy person. Financial stringency and overemphasis on the relief aspects of the work program fostered a preference for projects that provided the greatest amount of direct employment for a given expenditure, and the adoption of conditions of work and remuneration that were not calculated to call forth the greatest productivity of which a worker was capable. Because of the inadequate development of other public-aid programs more

[1] Prepared under the direction of Assistant Director Thomas C. Blaisdell by Dr. Eveline M. Burns of the Board's staff and Director of Research for the Board's report, "Security, Work, and Relief Policies"—1942 (House Document 128, Part 3).

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suited to their needs, there were at all times employed on work projects some persons of doubtful efficiency whose presence tended to discredit the program as a whole. Finally, because of uncertainties as to the continued support of the program by the Federal Government from year to year, in many communities projects were not prepared in advance as an integral part of total community development.

To correct these weaknesses and to underwrite the guarantee of the right to a job the following steps are necessary:

1. Formal acceptance by the Federal Government of responsibility for ensuring jobs at decent pay to all those who have exhausted, or are not eligible for, unemployment compensation benefits and who are willing and able to work, regardless of whether or not they can pass a test of need.

2. Immediate exploration of the financial resources and responsibilities of the various levels of government with a view to the preparation of plans for ensuring that adequate appropriations to implement this guarantee shall be forthcoming.

3. Vesting in permanent agencies of government the responsibility for seeing that plans for socially useful work are prepared and integrated and that the necessary data regarding the location and characteristics of the unemployed shall be available as and when needed.

4. Immediate action at the national level and in the communities to draw up inventories of needed public work and services and preparation of specific plans for those which have a high priority.

5. Expansion of the functions of the employment service and strengthening of its personnel to the end that it may operate as the key mechanism in referring unemployed workers to available jobs, whether public or private, in the light of known facts regarding the numbers and characteristics of the unemployed and the probable future demands for labor.

II. Preparation of Special Programs for Young People

The mutual responsibilities of the community as a whole and its young people between school-leaving age and adulthood present difficult problems of policy which as yet are far from being solved. The course of events abroad since the first World War has tragically depicted the consequences of thwarting the natural desire of young people to participate fully in opportunities for productive work and economic advancement. Our own experience with the selective service rejections and the shortage of skilled labor has demonstrated the folly of neglecting to make full use of the formative years of our young citizens to develop a group of young adults physically and occupationally equipped to take their part in the society of which they are members. Nor can it be said that we have succeeded in inculcating into our young people a lively appreciation of the interdependence between freedoms and rights on the one hand and responsibilities and obligations on the other.

The task of devising appropriate measures for young people between school-leaving age and full adulthood is admittedly not easy. For while young people cannot be expected to develop a sense of loyalty and obligation to the society of which they are a part if they are denied opportunities which they believe they can legitimately claim, such provision as is made for them must avoid the risk of weakening self-reliance and initiative. Hitherto it cannot be said that the Nation has grappled very effectively with this problem.

In the years preceding the war special work programs for young people had been developed but they were inadequate in number to provide work for all young people who could have benefited from them. In particular, many idle youth were denied work opportunity because they were not members of families who were in need of public aid. Nor was there any orderly method of selecting the youth who were to benefit from these limited programs; both the criteria for determining priorities and the machinery for allocation were unsatisfactory. The objectives of the various youth work programs were not always sharply differentiated or carefully adapted to the special needs of the groups benefiting from them. Far too little attention was paid to conserving and improving the physical health of young people, and to developing a balanced and much-needed combination of work experience and education. Even the conditions of work were not calculated to instil regular work habits and disciplines. Nor, where more technical training was given, was sufficient attention paid to relating the types of skills to be developed to the anticipated demands of the labor market. Finally, a primary need of young people for guidance in planning their future work activities was very largely neglected.

Some of the weaknesses in public provision for the needs of youth could be corrected by the adoption of the measures which have been suggested in the section on education. In particular, revision of the school curricula to provide that all young people while in school obtain meaningful unpaid work experience in school or community service, and adequate maintenance grants to assure educational opportunity to all young people above the age of compulsory school attendance who desire and can profit by continued schooling, would materially simplify the general problem of social policy in regard to the preadult. But these measures need to be reinforced by other developments.

1. Immediate steps to develop adequate counseling and guidance facilities for young people in all parts

of the country, utilizing the employment office as the local coordinating body.

2. Renewed attention to the development of adequate data relating to the demand for and supply of occupational skills so that guidance, apprenticeship, and training programs can be keyed to the realities of the labor market.

3. Assignment to a permanent agency of government of responsibility for preparing plans for special work programs for preadults which will lay stress on the educational aspects of the work and upon the inculcation of work habits and disciplines and familiarity with the use of tools.

4. Revision of the present arrangements governing access to youth, work, and training programs, so as to ensure that the referral of specific youth to specific programs shall take into account all measures available, the capacities of the individual youth, and his relative need for the particular kind of experience offered by any given program.

III. Expanded Use of Social Insurance Principles

The preference of the mass of our people for security through social insurance, as against other methods of assuring income when earning power is interrupted, is undeniable. At the same time social insurance serves a useful purpose for society as a whole, for it offers a means of satisfying the desire for security as a right, while setting a limit to the economic and financial risks involved in this guarantee.

Although social insurance programs now protect a substantial proportion of the population against loss of income due to temporary or permanent impairment of earning power, we have failed to make full use of this convenient and popular security device. Except for the admittedly inadequate workmen's compensation laws and for the recently enacted Rhode Island temporary disability compensation law, social insurance has not yet been extended to cover one of the most important causes of economic insecurity, namely, income loss due to temporary or permanent physical disability. Social insurance protection against the risks of old age is still denied to large sections of the population, and in particular the important group which depends for its livelihood on agriculture, while the benefits payable to those whose earnings are low are far from adequate to maintain health and decency. Social insurance protection against loss of income during the first weeks of unemployment is particularly unsatisfactory. The coverage is even more restricted than that of old-age and survivors insurance. Benefits bear no relation to family needs, and in general the lowest benefits are payable to workers whose private resources, because of low earnings or irregularity of employment in the past, are least. Benefits are payable, in the majority of cases, for too short a period. Efforts to make the program more adequate are hindered by the operation of experience-rating systems which in effect offer inducements to employers to ensure that compensable unemployment is minimized rather than that employment is maximized. The financial stability of the program is far from assured because of the pressures to reduce taxes under experience-rating systems and because the provisions for building up separate state reserves fail to reflect the fact that unemployment is a national problem in large measure attributable to forces outside the control of the individual states.

To make the most effective use of the principle of social insurance the following steps are indicated:

(1) Disability Insurance

Immediate enactment of social insurance against temporary and permanent disability. The coverage of this program should be as wide as that of old-age and survivors insurance.

(2) Old-Age and Survivors Insurance

(*a*) Reconsideration of the benefit formulas of the old-age and survivors insurance program with the object of increasing the benefits payable to the low-income groups.

(*b*) Immediate extension of coverage to include employees of nonprofit corporations, and progressive extension to agricultural and domestic workers as and when revision of the benefit formulas and the minimum earnings requirement offer assurance that the benefits received by these low-income groups will be superior to those available under alternative security measures.

(*c*) Revision of the financial arrangements to provide that part of the costs of the program shall be drawn from the general tax revenues.

(3) Unemployment Compensation

(*a*) Revision of the benefit formulas to provide benefits for dependents and more nearly adequate minimum basic benefits.

(*b*) Immediate extension of coverage to employees of small firms employing one or more workers, and of nonprofit corporations; and inclusion of agriculture as and when revision of the benefit formula offers assurance that the benefits received by such workers will be superior to those available under alternative security measures.

(*c*) Extension of benefit duration to a flat period of 26 weeks, uniform for all beneficiaries.

(*d*) Abolition of experience rating as an integral part of the unemployment compensation program.

(*e*) Revision of the financial arrangements to provide for a sharing of the costs between employers, workers, and the general taxpayer, and to ensure that all reserves shall be pooled in a single national fund.

(*f*) Replacement of the present Federal-State system by a wholly Federal system.

IV. Strengthening the Special Public Assistances

As part of the general policy of assuring economic security in a form which is appropriate to the peculiar needs of identifiable groups, the country has developed a series of special public assistance measures—old-age assistance, aid to the blind, and aid to dependent children. These programs afford security to a large group who for historical or other reasons cannot conveniently be provided for through social insurance, but whose needs are yet sufficiently unique and of predictable duration to justify their separation from the undifferentiated group of general relief recipients. Yet in many respects the programs as they operate today fail to achieve their basic objectives. In many States, especially in the aid to dependent children program, monthly payments are far from adequate to sustain health and decency. They are not everywhere fully in operation and long waiting lists are far from uncommon. The present regulations governing the Federal grants to States tend to foster the imposition of upper limits to the payments made to applicants, impede the development of medical and other services appropriate to the needs of the groups selected for these special programs, and fail to give most Federal aid where most is needed.

In order that these programs should more effectively meet the needs of the groups for whom they have been devised, the following steps should be taken.

1. Changes in the amount of the Federal grant so that payments under the aid to dependent children program should be comparable in adequacy with those for the aged and the blind, and to authorize payments to mothers.

2. Modification of the law to permit Federal participation, up to a specified maximum, in direct expenditures made by the public assistance agency for medical services and supplies for recipients of special public assistance payments.

3. The present equal matching Federal grant should be replaced by one in which the amount of the Federal contribution would reflect differences between the States in need and in economic and fiscal capacity.

4. The States' plans should provide for a distribution of Federal and State monies within their political subdivisions in accordance with relative need and fiscal capacity.

V. Creation of an Adequate and Acceptable General Public Assistance System

Adoption of the proposals already listed would go far toward removing the fear of want, but one additional step is needed to close the gaps in the barriers we have erected against the threats to the basic security of our people. The categorical approach to social security, which involves the operation of a series of diversified programs, has one serious disadvantage: The risk is always present that some groups of needy persons will be unable to satisfy the eligibility requirements of any one program and thus be denied access to minimum security. Indeed, unless the number of special programs is increased to unwieldy proportions, the more access to the special programs is restricted to those for whose needs each program is uniquely appropriate, the greater will be the numbers who fall between the gaps. Such people can be assured freedom from want only if there is in operation in every community an adequate and acceptable general public-assistance program, for which the sole eligibility condition is need, regardless of the cause of dependency.

Such a basic security system, underpinning all special programs, does not now exist in many parts of the country. In some cases there is still no public provision at all for any such comprehensive program; in others, such public aid is only intermittently available owing to financial stringencies. There is a widespread tendency to deny aid to certain groups of people regardless of the extent of their need. Single men, employable persons, farmers, the self-employed, and, above all, migrants and other persons without legal settlement or resident status are penalized in this manner in many parts of the country.

Where relief is available the level of living afforded recipients is at best meagre; it is seldom sufficient to provide even the modest budgets necessary to maintain an emergency standard of living, and in many areas and cities it is disgracefully low. Financial pressures and lack of public concern over the welfare of those dependent on this residual system not infrequently lead to a failure to provide in relief budgets for even such essential items as rent.

General relief is today the only public-aid measure, other than workmen's compensation, which receives no Federal financial aid. In consequence, States and localities have been tempted to channel their resources into the programs which carry Federal subventions, with two unfortunate results. The needs of those who cannot qualify for the Federal programs have been relatively neglected and there has been a tendency to stretch the eligibility requirements for the special programs and overload them with persons for whom these special

measures are clearly inappropriate. Finally, because the general relief systems have been financially starved, they have in many areas been unable to cooperate effectively in the administration of many of the special programs which involve their participation. More and more responsibilities have been thrown upon the weakest unit in the entire structure of public-aid agencies, and the inability of the local relief agencies to perform their tasks has often impeded the attainment of the objectives of the special programs.

To remedy these deficiencies and to complete the provisions we have already made to protect our people against want, the following are indicated:

1. There should be a federal grant-in-aid for general public assistance which should be distributed between the States on a basis reflecting differences in need and economic capacity.

2. The costs of general public assistance granted to persons with less than 1 year's residence should be a wholly Federal charge and the States should be required to apply to such persons the same standards regarding eligibility and assistance given as to the remainder of public assistance recipients.

3. In addition to the requirements now governing the Federal grants for special public assistance, the States' general public assistance plans should provide that general assistance may not be denied any person on the basis of race, sex, marital, or employment status, or failure to have resided in the State for more than a year, and should meet Federal standards relating to adequacy of aid and methods of payment.

VI. Protection of the Security of Ex-Service Men and Women

The problem of providing for the basic economic security of ex-service men and women differs from that faced by the country during the last war because there now exists a body of security measures some of which could, with relatively slight amendment, provide for the needs of ex-service men. It is obviously undesirable to add to the already great complexity of social-security programs. At the same time the country will wish to assure itself that the basic security available to ex-service men is at least as good as that available to civilians, and it may wish even to afford preferential treatment to them. The problem is how to achieve these objectives without further complicating administration and running the risk of unintended double payments.

Compensation for service-connected injuries is already accepted as a responsibility of the Federal Government. Yet even here the need for codification of existing legislation and the formulation of clear policies is evident. There are considerable discrepancies between the types of payments made to veterans of the various wars and to their survivors. The logic and the justification for the lines now drawn between service-connected and non-service-connected disabilities and the extent to which the Federal Government assumes, and should assume, responsibility for the latter call for reexamination and clarification.

A large proportion of ex-service men and women are already covered by the old-age and survivors insurance program, and the number would be increased by adoption of the amendments to this program which have been suggested above. However, further steps need to be taken if ex-service men and women are not to be penalized because of their enforced absence from civilian employment. As the law now stands, such absence may prejudice a worker's eligibility because he may fail to accumulate the necessary number of quarters of covered employment. And his benefit rate may be reduced because his absence will reduce the average wage on which his benefit is based, while he also loses the percentage increment due to additional years of coverage.

Fortunately these difficulties could be taken care of by relatively slight changes in the Social Security Act. It could, for example, be provided that in determining eligibility a quarter of service in the armed forces should be taken as the equivalent of a quarter of covered employment, while in determining benefit rights it might be provided that the quarters of military service should be disregarded in computing a claimant's average wages, and that all such quarters should be treated as quarters of coverage for the purpose of determining percentage increments.

Assurance to ex-service men and women of unemployment compensation protection at least equivalent to that enjoyed by civilians calls for more drastic measures. In this case a year of service is likely to destroy all previously accumulated benefit rights. Forty-two States have taken steps to freeze the benefit rights as of the time when a man entered military service. But even if the remaining jurisdictions should take similar steps, or if this arrangement should be made general through a federalized system, the problem would not be solved. It would still leave unprotected the increasing number of those who had not obtained covered employment prior to entering military service. And it would place ex-service men at a disadvantage as compared with civilians, because since 1939 wages have risen and employment has become more continuous. Hence the civilian drawing benefits after the war would receive a benefit rate that reflected the high wages and overtime of the war period, whereas the ex-soldier would be entitled only to benefits depressed by the lower wages and periods of unemployment characteristic of the pre-war years.

To assure ex-service men and women equal access to unemployment compensation it will be necessary to create a special unemployment compensation program. This measure should provide adequate uniform basic benefits, probably equal to the highest rate payable in the majority of States, with dependents' allowances. The benefits should be payable as a right for a maximum of 26 weeks during the first year following demobilization, and claimants should be required to register at an employment office as a condition of their receipt.

Much thought must be devoted to the coordination of existing and proposed special veterans' legislation with the other social-security measures now available to the population as a whole. Among the problems calling for study are the relationship between payments to survivors under veterans' and other legislation, the extent to which payments to veterans or their families are to be taken into account by administrators of other public-aid programs in assessing need, and, if disability insurance is enacted, the respective responsibilities of the general program and special measures for veterans in regard to non-service-connected disabilities.

VII. Development of an Efficient Administrative Organization

Administration of the system of social-security measures which the Nation has adopted involves the participation of all levels of government, in varying degrees, in a variety of diversified programs. This situation gives rise to challenging problems of organization and coordination. Lack of success in solving this broad administrative problem has in the past created real difficulties for the people the programs are intended to serve, for the administrators in the efficient performance of their duties, for employers and other members of the public whose cooperation is essential at various stages in the administrative process, and for the Nation as a whole, which has an interest in seeing that the objectives of the security programs are attained with a maximum of economy.

Because of the piecemeal manner in which the various programs have developed over the last 10 years, there is still imperfect coordination of the various programs operated by any one level of government. In consequence, there are both gaps in service and jurisdictional disputes between agencies as to responsibility for clienteles or functions. More careful attention to the objectives of the specialized programs and to the formulation of eligibility conditions which would admit to each only those for whom the program in question is appropriate would contribute materially to a reduction of these difficulties. In addition, there is at each level of government a need for reconsideration of administrative organizations. In some cases complete integration of administration of closely related programs is indicated. In others more effective use of the device of the interdepartmental committee is called for. In yet others there is need for the exercise of authority to insure that interagency disputes are brought to a speedy conclusion and that the resulting distribution of administrative responsibilities reflects the public interest rather than the relative bargaining strength of the agencies concerned.

The fact that the different levels of government have adopted differing organizational structures for the administration of programs in which they jointly participate has created other difficulties. In this case simplification of the problems faced by administrators at the State and local level could be promoted by greater uniformity of policy and requirements on the part of the many Federal agencies which deal with a single State agency. Greater uniformity of the regional boundaries of the various Federal agencies would also simplify the task of the State administrators and foster coordinated planning for related programs in any given region.

In the localities, where the applicant comes in direct contact with administrators of the different programs, administrative arrangements are particularly unsatisfactory. There is no central point to which an applicant can go to discover what services are available to him, and the points of access to the various programs are unduly numerous. Far too little use has been made of the potentialities of the local welfare office as the point of access for all programs where eligibility is based on need, and of the local employment office for all programs dealing with the provision of work, training, and benefits payable under the social insurances.

There are three other major administrative problems which still call for solution. The first is the absence of any advisory body charged with responsibility for continually studying the over-all operation of the complex of social-security and work programs, and bringing to the attention of the President and the Congress development or modifications of programs essential to the attainment of the objectives which the Nation has set for itself. The second concerns the quality and adequacy of administrative personnel. Despite great expansions of the merit system in recent years, there are still important programs and parts of the country where staffs are not selected on this basis. Nor in many areas are the salaries and opportunities for advancement calculated to attract administrators of a high calibre. In addition, in many parts of the country case loads are far too large for efficient performance.

Finally, renewed attention must be paid to ways and means of enlisting the active cooperation of the lay public at appropriate points in the administrative process. The social-security and work programs affect the

lives of millions of our people and raise major questions of public policy. A democratic people cannot afford to remain in ignorance of the success or failure of the operation of the programs they have devised, nor to adopt the view that a program operated by government is no longer a concern of the private citizen. Greater efforts must be made by administrators to take the public into their confidence, and all techniques for enlisting lay participation, such as advisory committees and representation of citizens on appeal bodies, must be exploited to the full. In this venture, the private social agencies have an important role to play. The sphere of their activities has been changed by the increasing assumption by government of responsibility for maintenance of the needy, but their opportunities for experimentation in the improvement of service and for leadership in evaluation and understanding of policies and programs have been correspondingly increased.

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